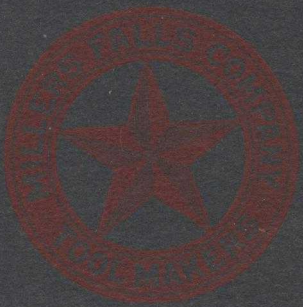
Catalogue "O"

POCKET EDITION



Bernard Miller.

Catalogue No. G

Millers Falls Company

E. P. STOUGHTON PRESIDENT
GEO E ROGERS VICE-PREST. & TREAS
GEO W. NIMS SECRETARY

Warehouse and Sales Office.
28 WARREN STREET, NEW YORK, U S A.
Works:
MILLERS FALLS, MASS., U. S. A.

CABLE ADDRESS "TIGNONA"

NEW TOOLS.

In publishing this catalogue, it has been our aim to illustrate our tools clearly and plainly, grouping so far as is practicable illustrations and descriptions of articles of a kindred nature, in the belief that the users of the publication will prefer to have it concentrated and concise for easy and quick reference, rather than too ornate and extended over many pages of isolated matter.

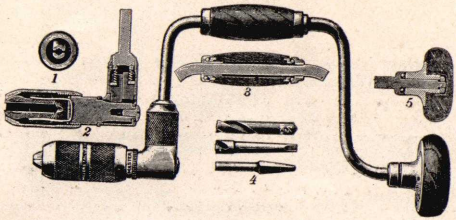
Since our catalogue No. 30 was issued we have produced a few new tools and made many important improvements in those which were illustrated in previous issues. Attention is called to a number of the improvements in the descriptive matter following illustrations. We mean to hold and deserve the reputation already established of making the very best tools in our line. Many features of our tools are covered by patents. These patents will be protected. Illustrations and descriptions of the new tools referred to may be found as follows

Master Brace	on page	1
Holdall Brace	" "	2
Brace No. 040	" "	10
Bench Hook No. 56	" "	15
Breast Drill No. 012	" "	23
Bit Gauge No. 2	" "	41
Lathe Chuck No. 150	" "	43
Hack Saw Frame No. 4C	" "	45
Magazine Hack Saw Frames Nos. 28, 29, 30, 35 and 40	" "	49
Glass Cutters Nos. 100 and 200	" "	76
Spoke Trimmer No. 102	" "	78

We are pleased to say that certain bit makers, among them the Russell-Jennings Mfg. Co. of Deep River, Conn. are now making bits with shanks of uniform taper. Such bits will relieve braces from much blame which has heretofore been laid to them instead of where it properly belonged, namely to the bits.

MILLERS FALLS COMPANY,
28 Warren Street,
New York, U. S. A.

THE MASTER BRACE.



This bit brace at almost every point in its construction introduces a new element, born of over 40 years experience in the manufacture of bit braces. It is a distinctive masterpiece in its every function.

Cut No. 1. Gives an *end view* of the chuck. The jaws are milled lengthwise in their inner surfaces in six grooves in such manner as to form *eight sharp* holding points of contact of the shank to be held in the chuck. This new form of grip (patented) gives unusual tenacity to the grip.

Cut No. 2. Shows a sectional view of the *chuck* and *ratchet device*, both of which are new and original.

The jaws to the chuck open *parallel* except when used for holding taper or bit stock shanks when they adjust themselves exactly to the shape of the bit or piece to be held. Thus they will hold securely straight shanks from ¼ inch down to ⅛ inch and all styles and sizes of bits and tapers and irregular shaped shanks.

The ratchet device is perfect in its working and is entirely new and simple. It is absolutely concealed and is very effective and positive.

Cut No. 3. Shows a sectional view of the *ball-bearing* center *handle*. This feature of the brace is very unique and desirable. The handle is fitted at both ends with *steel cones*, running on *steel balls*, which in turn run in *steel cups* or races. The left hand race is secured firmly and permanently to the sweep, while the cup or race at the right hand end of handle is threaded onto the sweep and thus may be adjusted either way as may be needed to get perfectly free action of the handle.

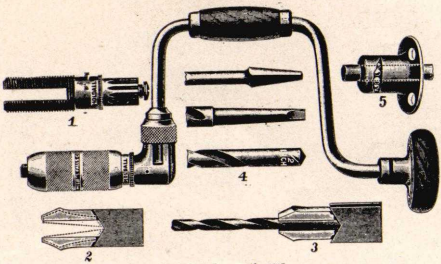
Cut No. 4. Depicts a few of the many and varied shapes which may be held perfectly in the chuck.

Cut No. 5. Shows sectional view of *ball-bearing head*.

No. 830.	14	inch	sweep	per dozen,	$45.00
" 831.	12	"	"	" "	42.00
" 832.	10	"	"	" "	39.00
" 833.	8	"	"	" "	36.00

Put up ½ dozen in a paste board box.

HOLDALL BRACE.



Patented June 25th, 1907.

The constantly increasing use among wood workers of twist drills having both *straight* and *bit stock* shanks, has created a necessity for a moderate priced chuck that will hold all varieties of shanks securely and with a reasonable degree of accuracy. We have, after a great deal of expensive experimenting evolved the "HOLDALL CHUCK" which we believe to be nearer perfection than any *brace chuck* ever produced. It will hold with equal accuracy and tenacity a great variety of shanks. In the above illustration

No. 1. Shows the *unbreakable* socket made from solid bar steel.

No. 2. The jaws always open *exactly parallel* unless a tapering shank is to be held, when they *adjust themselves exactly* to the shape to be used. (See dotted lines). The shape of the inner socket as shown in cuts 2 and 3 is such that straight or taper shanks are *forced* to center accurately.

No. 3. Shows the jaws grasping a ⅜ inch straight shank twist drill. The chuck will hold *straight* or *taper* shanks, *round* or *square*, from ⅛ inch to ½ inch in diameter, also all sizes of expansive bits.

No. 4. Shows a few of the variety of shanks this chuck will hold.

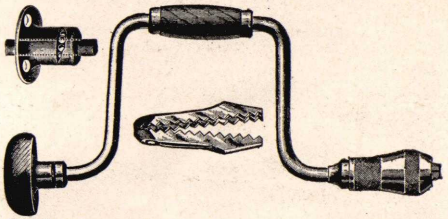
No. 5. Shows the quill with ball bearing.

The "HOLDALL BRACE" is constructed at every point on carefully considered scientific lines and must recommend itself as the most perfect and universal brace on the market. The shape of the nut is new in design and strong in construction and made to fit the hand perfectly. The covered ratchet ring is a feature of the tool. The jaws are made from dropped steel forgings.

No. 730.	14 inch sweep	per dozen,	$42.00
" 731.	12 " "	" "	39.00
" 732.	10 " "	" "	36.00
" 733.	8 " "	" "	33.00

Put up ¼ dozen in paste board box.

BARBER IMPROVED BRACES, Nos. 10 to 15.



These braces possess the following points of superiority: The sweep is made from steel. The jaws are forged from steel. The wood handle has brass rings inserted in each end so it cannot split off. The chuck has a hardened steel anti-friction washer between the two sockets, thus reducing the wear. The heads and handles are cocobola.

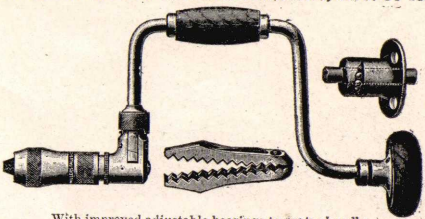
The head has a bearing of steel balls, running on hardened steel plates, so no wear can take place, as the friction is reduced to the minimum. The brace is heavily nickel plated and warranted in every particular.

We endeavor to make these goods as nearly perfect as is possible in durability, quality of material and workmanship, and fineness and beauty of finish. Note the improved adjustable bearings to center handle.

No. 10.	14 inch sweep			per dozen,	$33.00
" 11.	12 "	"		" "	30.00
" 12.	10 "	"		" "	27.00
" 13.	8 "	"		" "	24.00
" 14.	6 "	"		" "	21.00
" 15.	4 "	"	(This No. not ball-bearing)	" "	20.00

Put up ½ dozen in a paste board box.

BARBER IMPROVED RATCHET BRACES, Nos. 30 to 34.



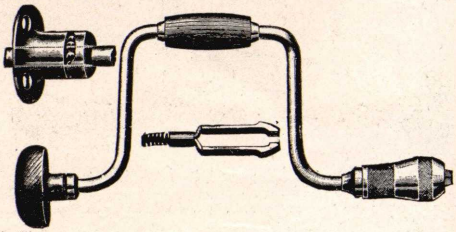
With improved adjustable bearings to center handle.

No. 30.	14 inch sweep			per dozen,	$42.00
" 31.	12 "	"		" "	39.00
" 32.	10 "	"		" "	36.00
" 33.	8 "	"		" "	33.00
" 34.	6 "	"		" "	30.00

Put up ½ dozen in a paste board box.

BARBER BRACES, Nos. 40 to 44.

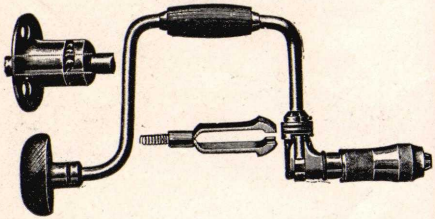
The braces listed below are same in quality of material and finish as those described on page 3, the difference being in style of jaw and ratchet only.



No. 40.	14 inch sweep	per dozen,	$33.00
" 41.	12 " "	" "	30.00
" 42.	10 " "	" "	27.00
" 43.	8. " "	" "	24.00
" 44.	6 " "	" "	21.00

Put up ½ dozen in a paste board box.

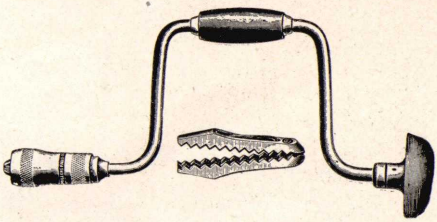
BARBER RATCHET BRACES, Nos. 61 to 63.



No. 61.	12 inch sweep	per dozen,	$39.00
" 62.	10 " "	" "	36.00
" 63.	8 " "	" "	33.00

Put up ½ dozen in a paste board box.

BARBER IMPROVED BRACES, Nos. 221 to 223.

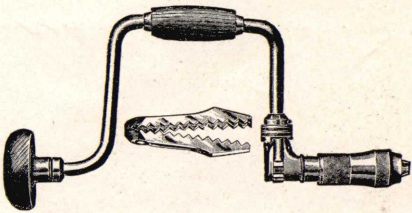


It will prove troublesome to find another make of braces at equally low prices which compare favorably in merit and appearance with this line. They are handsomely polished and nickeled. The heads and handles are hard wood stained in imitation of cocobola. The jaws are forged.

No. 221.	12 inch sweep	per dozen,	$13.00
" 222.	10 " "	" "	12.00
" 223.	8 " "	" "	11.00

Put up ½ dozen in a paste board box.

BARBER IMPROVED RATCHET BRACES, Nos. 321 to 323.

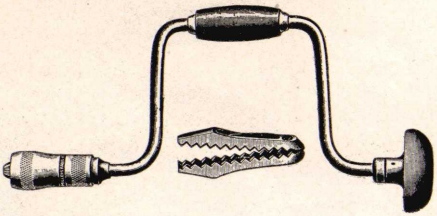


These ratchet braces conform in material, finish and excellency to the numbers described above.

No. 321.	12 inch sweep	per dozen,	$24.00
" 322.	10 " "	" "	23.00
" 323.	8 " "	" "	22.00

Put up ½ dozen in a paste board box.

BARBER IMPROVED BRACES, Nos. 21 to 23.

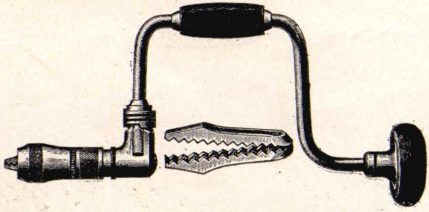


The sweeps to these braces are made of steel, polished, but not nickel plated. The heads and handles are stained in imitation of cocobola. The jaws are of the alligator pattern. The threads are lathe cut, and all parts of the brace made for durability.

No. 21.	12 inch	sweep	per	dozen,	$11.00
" 22.	10 "	"	"	"	10.00
" 23.	8 "	"	"	"	9.00

Put up ½ dozen in a package.

BARBER IMPROVED RATCHET BRACES, Nos. 121. to 123

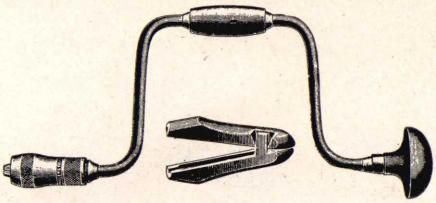


In material and finish these braces are of same general character as the line described above. As the illustration indicates, alligator jaws are supplied with these numbers.

No. 121.	12 inch	sweep	per	dozen,	$19.00
" 122.	10 "	"	"	"	18.00
" 123.	8 "	"	"	"	17.00

Put up ½ dozen in a package.

BARBER IMPROVED BRACES, Nos. 71 to 73.

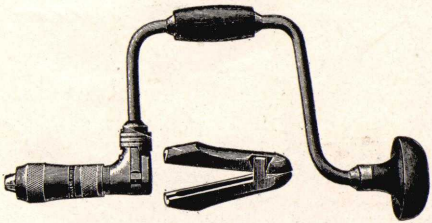


With steel sweeps tumbled, but not polished. The heads and handles are made of hard wood, stained in imitation of cocobola. A bolster is fixed to the sweep for the head to rest against, and gives additional support. This is a serviceable brace, and quite as low in price as any other brace of equal quality in the market.

No. 71	12 inch sweep	per dozen,	$8.00
" 72.	10 " "	" "	7.50
" 73.	8 " "	" "	7.00

Put up ½ dozen in a package.

BARBER IMPROVED RATCHET BRACES, Nos. 82 and 83.

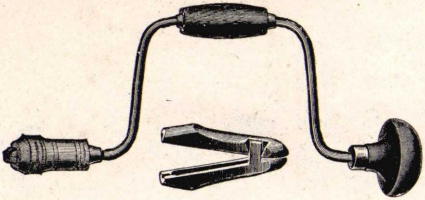


The description of finish, etc., given above will also apply to Nos. 82 and 83.

No. 82.	10 inch sweep	per dozen,	$14.00
" 83.	8 " "	" "	13.50

Put up ½ dozen in a package.

BARBER IMPROVED BRACES, Nos. 102 and 103.



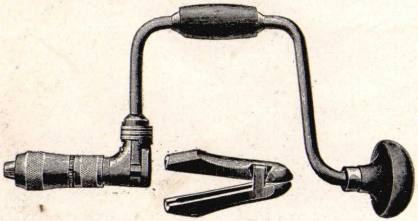
We are frequently called upon for braces at very low prices, and in order to make our line complete offer the numbers specified below.

The sweeps and sleeves are tumbled, and the heads and handles made of hard wood in natural color.

No. 102. 10 inch sweep.....per dozen, $5.20
" 103. 8 " " ..... " " 4.70

Put up ½ dozen in a package.

BARBER IMPROVED RATCHET BRACES, Nos. 202 and 203.

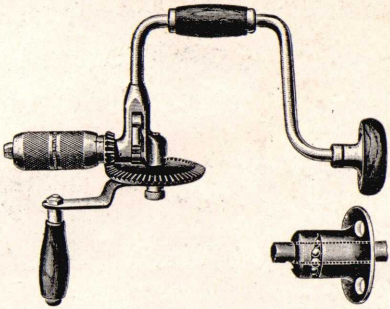


Nos. 202-203 correspond in finish to Nos. 102-103, as per description above.

No. 202. 10 inch sweep.....per dozen, $10.50
" 203. 8 " " ..... " " 9.50

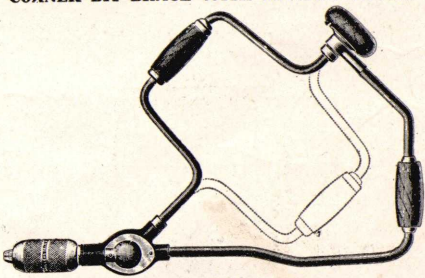
Put up ½ dozen in a package.

DRILL BRACE WITH BALL-BEARINGS AND MASTER CHUCK.



To be used as an ordinary ratchet bit brace, or as a breast drill. The brace has 10 inch sweep, and is of same quality and finish as those described on page 1.
The drill can be attached or detached in a minute's time.
Price, complete.....per dozen, $36.00.
Put up 1/12 dozen in a paste board box.

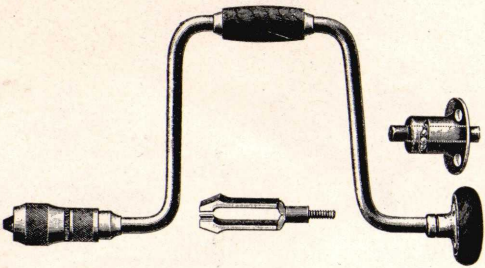
CORNER BIT BRACE WITH MASTER CHUCK.



As the name of this tool implies, it is intended for boring in corners, or other positions, where the sweep of the ordinary brace cannot be revolved. It will be found especially serviceable to electricians and plumbers. The chuck is operated by gears made from steel, which are enclosed and thus protected from clogging by dirt.
Bright parts are nickeled and the head and handles are cocobola.

No. 502. 10 inch sweep.....per dozen, $36.00
" 503. 8 " " ..... " " 33.00
Put up ⅙ dozen in a box.

CARSHOP & SHIP-CARPENTER'S BRACE, No. 040.



We have frequently had calls for and have made to order braces of larger dimensions than any we have heretofore listed.

No. 040 is a brace of this character. It has a 16 inch sweep made from ⅝ inch stock. It is a very stiff and strong brace and will stand any amount of strain needed without becoming sprung. Much additional power is gained by the increased size of the sweep.

The chuck to this brace is of same pattern as that of our No. 40 to 44 line shown on page 4, but made heavier in proportion to the sweep.

Price ..... per dozen, $45.00

Put up ¼ dozen in a box.

STEEL CLAD BRACE HEADS.

At small advance over regular prices we can furnish any of our braces with steel clad heads as shown in above illustration.

COMBINATION BRACE AND CHAIN DRILL, No. 50.

This tool consists of a ratchet brace substantially our No 732, and a chain drill which is interchangeable with the chuck to the brace In using the chain drill, the chuck to the brace is removed, and the chain drill substituted. The brace chuck which has been removed as above, may then be inserted in end of chain drill for holding bit stock shanks, etc

Note the improved Master chuck as described on page 1, also the improved adjustable bearings to center handle

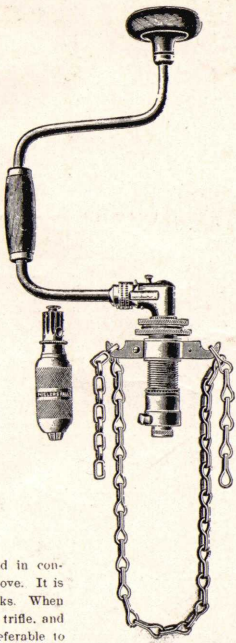
The self feed is obtained by turning the knurled disc against the washer

The chain drill attachment is made from steel and cast iron, and is very durable. It is highly polished and nickel plated

The chain supplied is extra heavy and will not break

Price .....per dozen, $42.00

Put up one in a box

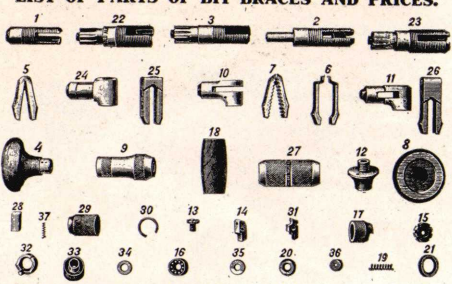


DRILL SOCKET A.

This socket is designed to be used in connection with the chain drill shown above. It is arranged to hold drills with bit shanks. When inserted in the drill it projects but a trifle, and in some instances will be found preferable to the chuck.

Price .....each, $ 25

LIST OF PARTS OF BIT BRACES AND PRICES.



In ordering parts the number of the brace which they are wanted for should be specified as well as the number of the part.

No.		Price.
1.	Tail Socket, if for Braces Nos. 10 to 15	each, $ .25
1.	" " " " " 221 to 223 and 21 to 23	" .20
1.	" " " " " 71 to 73 and 102 to 103	" .15
2	" " " " " 61 to 63	" .30
3.	" " " " " 30 to 34	" .30
3.	" " " " " 121 to 123	" .25
4.	Head, Maple Wood, Stained	" .08
5.	Jaws for Braces Nos. 221 to 223 and 21 to 23	per set, .15
6.	" " " 40 to 44 and 61 to 63	" " .15
7.	" if for " " 10 to 15 and 30 to 34	" " .20
7.	" " " " 121 to 123 and 321 to 323	" " .15
8.	Head, Cocobola Wood	each, .15
8.	" Stained "	" .08
9.	Sleeve, Nickeled	" .30
9.	" Polished	" .25
9.	" Tumbled	" .20
10.	Crooked Socket, if for Braces Nos. 61 to 63 and 321 to 323	" .30
10.	" " " " " 82 to 83 and 202 to 203	" .20
11.	" " " " " 30 to 34	" .30
11.	" " " " " 121 to 123	" .25
12.	Quill, each, $ .25	
13.	Chuck Screw " .04	
14.	Ratchet Pawl per set, .30	
15.	" Wheel each, .15	
16.	Ball Cup " .05	
17.	Holdall and Common Ratchet Ring " .10	
18.	Handle, if Maple (stained) " .10	
18.	Handle, Cocobola " .15	
19.	Pawl Spring " .02	
20.	Ball Plate " .01	
21.	Washer " .01	
22.	Holdall Socket " .35	
23.	Master " " .35	
24.	" Crooked Socket " .30	
25.	" Jaws " .25	
26.	Holdall Jaws each, .30	
27.	Holdall and Master Shells " .35	
28.	Master Ratchet Pawls pair, .20	
29.	" " Ring each, .15	
30.	Master Ratchet Ring Spring " .02	
31.	Holdall Ratchet Pawls pair, .30	
32.	Master Ring Bushing each, .08	
33.	Master Handle Ball Cup " .10	
34.	Master Handle Ball Cup Washer " .01	
35.	Master Handle Ball Cup Collar " .08	
36.	Quill Washer " .01	
37.	Master Pawl Spring " .01	

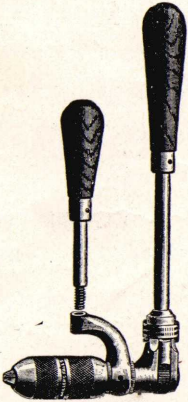
PATENT UNIVERSAL ANGULAR BIT STOCK.

The Universal angular bit stock is presented to the public as a time economizer, to be used in connection with a brace and bit for boring holes in places where the brace and a bit could not be used. It can be varied in any position from a straight line parallel with brace chuck to the angle shown in cut. The ability to vary the angles, either at the commencement or during the operation of boring a hole is an important feature

Price.....per dozen, $24.00

Put up one in a paste board box.

RATCHET CORNER BORER, No. 140.



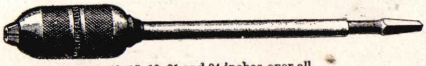
This cut depicts this tool very clearly. It is designed to be used in corners between joists and in other unusual places where a brace cannot conveniently be employed. The long handle works the tool while the shorter one is designed for steadying it. The teeth on the ratchet wheel are cut very fine to admit of a short bite.

The iron and steel work is handsomely polished and plated, and the ash handles stained to imitate cocobola. Plumbers and electricians as well as woodworkers will appreciate this tool.

Price.....per dozen, $18.00

Put up one in a box.

EXTENSION BIT HOLDER, No. 1 IMPROVED.



12, 15, 18, 21 and 24 inches over all.

Prices, all lengths.....per dozen, $15.00

EXTENSION BIT HOLDER, No. 3.

The bit extension here depicted is composed of four parts or pieces:

First, a shell with an inside shoulder so shaped as to adjust itself to the shoulders of auger bits of varying sizes and shapes.

Second, a socket with a square taper hole into which the square shanks of bits are to be inserted

Third, a knurled nut attachment to the shell in such a manner as to draw its shoulders down against the shoulder of the bit, holding it very securely in the socket.

Fourth, a shank or rod to which the square socket is soldered and pinned.

The extreme outside diameter of the shell is something under ⅝ of an inch, so the tool will follow a ⅝ or larger bit into a hole.

The tool will be found very useful for plumbers, electricians and others.

Price, made in lengths of 12, 15, 18 and 21 inches.....per dozen, $18.00
" " " " 24 inches..... " " 21.00

Polished and nickel plated Put up one in a paper box.

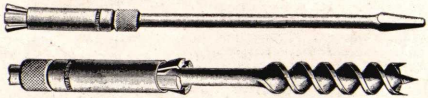
EXTENSION BIT HOLDER, No. 4.

No. 4 is of same pattern as No. 3 described above, but is made heavier and to follow a ⅜ inch bit or larger sizes.

Price, in lengths of 15 and 18 inches.....per dozen, $21.00
" " " " 24 inches..... " " 24.00

Put up one in a box.

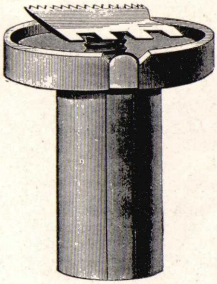
EXTENSION BIT HOLDER, No. 5.



It has been found very difficult to make a strong and adequate bit extension of a dimension so contracted as to follow a ⅝ inch bit into a hole, without either breaking the chuck through its weakness, or losing the bit in the hole being bored. As these extensions are used largely for boring between partitions, such results may be rather disastrous through the loss of the bit in the partition, or marring the grace of the structure into which the hole is bored. The chuck to No. 5 is a little less than ⅝ inch in diameter, so will follow a bit of that size. The four jaws are made in one piece from steel, and are exceedingly strong and so constructed that the square corners of the bit shank will go between them, holding them very rigidly. This extension is durable and capable of performing all that can reasonably be expected of it. The tool is most useful to electricians and plumbers.

Price, in lengths of 12, 15, 18 and 21 inches.....per dozen, $18.00
" " " " 24 inches..... " " 21.00

Put up one in a paper box.

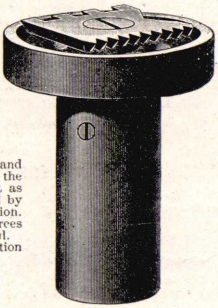


No. 55.

MILLERS FALLS BENCH HOOK, No. 55.

All that is required to set this hook in the bench is to bore a 2-inch hole ½ inch in depth, and a 1-inch hole the balance of the way through the bench, holding it in place with three screws. The hook has four faces, and can be turned around readily and set to any height desired The cut is full size

Price ------ ------per dozen, $4.50
Put up ½ dozen in a box.



No. 56.

MILLERS FALLS BENCH HOOK, No. 56.

The difference between this bench hook and No. 55 consists in the method of adjusting the hook to the proper height and facing it as desired. This adjustment is accomplished by means of the screw shown in the illustration. A coil spring at the bottom of the tool forces the hook upward when the screw is loosened.

It is neat in appearance, positive in action and convenient.

Price ----------per dozen, $4.50
Put up ½ dozen in a box.

CRISPIN'S AWL.

This is a tool for everybody. It has a hollow, ebonized handle, five inches long, and weighing three ounces. It contains inside, on a spool, fifty feet of best waxed linen shoe thread. The spool is also hollow, and contains three awls and five needles of various shapes and sizes. The thread fits the needles and the awls fit the handle. It is for use in the house, stable, field, camp or on the road, for making immediate repairs, when one use of it will be worth more than its whole cost.

Price ----------per dozen, $3.00
Put up one dozen in a box.

PRATT'S PATENT AUGER HANDLE, Nos. 1 and 2.

These handles will take and center correctly augers of all sizes and shapes. A steel band, 3 inches long and 3/16 inch thick, is made to fit the handle. This band is cut lengthwise into two equal sections, which are operated by the two steel screws with thumb nuts as shown in the cut. These sections can be opened wide enough to let the auger shank pass in without removing the nut on the end. This handle, made of ash wood, is very neat and substantial, and is much in demand wherever introduced.

Price ..... per dozen, $6.00

No. 1, 14 inches long No. 2, 17 inches long. Both of one price.

Put up ½ dozen in a paste board box.

ROGER'S AUGER HANDLE, No. 3.

Is a serviceable, well finished handle, at a low price. The body casting is made of malleable iron, the handles of ash wood and the screw of steel. It is a neat, light and strong handle Length, 16 inches, weight, 21 ounces

Price ..... per dozen, $4.50

Put up ¼ dozen in a paste board box.

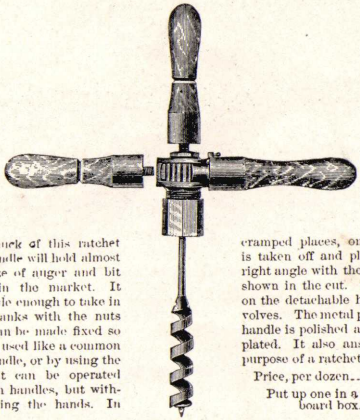
ROGER'S AUGER HANDLE, No. 03.

This handle is of same general pattern as No 3 described above. It has a longer clamp which is adjusted with two screws instead of one.

Price ..... per dozen, $5.00

Put up ¼ dozen in a paste board box.

PRATT'S RATCHET AUGER HANDLE, No. 4.

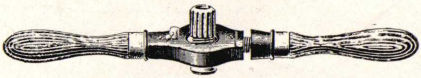


The chuck of this ratchet auger handle will hold almost every size of auger and bit shanks in the market. It opens wide enough to take in auger shanks with the nuts on. It can be made fixed so as to be used like a common auger handle, or by using the ratchet it can be operated with both handles, but without shifting the hands. In cramped places, one handle is taken off and placed at a right angle with the other as shown in the cut. The wood on the detachable handle revolves. The metal part of the handle is polished and nickel plated. It also answers the purpose of a ratchet drill.

Price, per dozen.....$24.00

Put up one in a paste board box.

GUNN'S RATCHET AUGER HANDLE, No. 5.

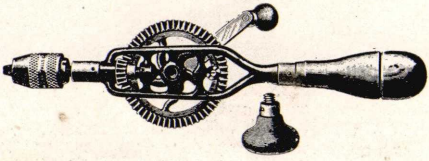


Will center and hold auger shanks of all sizes and shapes. It is not necessary to change the hands from one end to the other when using this handle. It can be made stationary or to ratchet either way. One handle may be taken off when working in a narrow place or next to a wall. The working parts are of malleable iron and steel, and the handles of second growth ash. We furnish an attachment with each handle, by the use of which the tool can be used as a ratchet drill, doing work of a drill which costs much more money. Length, 16 inches; weight, 1½ lbs.

Price.....per dozen, $15.00

Put up 1/12 dozen in a paste board box.

HAND DRILL, No. 1.



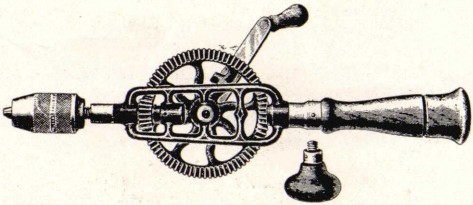
These drills are provided with chucks having three jaws, resting in solid sockets. There are no springs to get out of place or out of order. The chucks are nickeled and the handles cocobola. They hold drills from 0 to 3/16 inch.

A side handle, as shown in cut, is furnished with this drill.

Price, including 8 fluted points in hollow handle	per dozen,	$15.00
" of points only	" "	.72
" " "	per set,	.48

Put up 1/12 dozen in a paste board box.

HAND DRILL, No. 2.



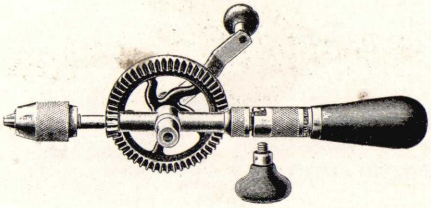
BALL-BEARING.

Drill No. 2 is same in general finish as No. 1, described above. It has cut gears and an adjustable friction roll to prevent gears from springing out of engagement.

Price, with 8 fluted points	per dozen,	$30.00
" of " "	" "	72
" of " "	per set,	.48

Put up 1/12 dozen in a box.

HAND DRILL, No. 3.



We recommend No. 3 as a high grade tool at a moderate price. Extreme length, 11 inches. Diameter of drive gear, 3 3/16 inches. Chuck holds from 0 to 3/16 inches. Bright parts nickeled. Drive gear japanned. Weight, 21 ounces.

The handle is hollow and the method of attaching it to or removing from the stock, in order to obtain bits or replace them, is unique, quick and convenient. The cell in the handle is sufficiently deep to enclose twist drill bits, the style most commonly used with hand drills.

Price, without bits.....per dozen, $12.00

Put up 1 in a box.

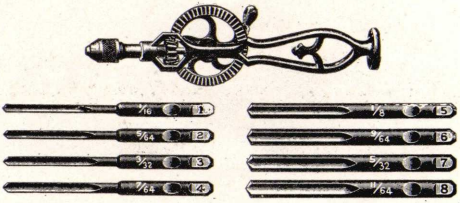
HAND DRILL, No. 4.

No. 4 drill is 8 inches in length, and weighs 8 ounces. It is made of iron, with rosewood handle, and has chuck for holding the drill points. This chuck is made on a new plan, and it centers and holds the drill perfectly. With each drill stock we send a box containing six superior drill points of various sizes.

Price of stock and drills.....per dozen, $6.00
" " points only.....per set, .25

Put up 1/12 dozen in a paste board box.

HAND DRILL, No. 04.



The frame and gears of this drill are the same as are used to make No. 4, but the chuck is much more substantial and efficient. Eight points for wood boring (as illustrated) are supplied with each drill.

Price of drill with 8 points.....per dozen, 9.00
" " points.....per dozen, .72
" " " .....per set, .48

Put up 1 in a box.

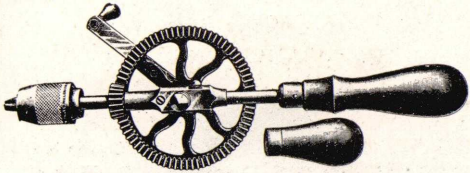
HAND DRILL, No. 5.

Has same chuck as No. 1, but is double geared, and is provided with a wide rim gear, to be grasped between thumb and fingers when the drill is used for delicate work. In this manner it can be run without liability of breaking points. Length over all, 11½ inches; weight, 20 ounces

Price, including 8 fluted points.....per dozen, $18.00
" of " " " " " .72
" " " " " .....per set, .48

Put up 1/12 dozen in a paste board box

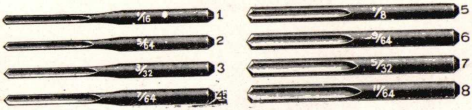
HAND DRILL, No. 7.



Extreme length, 12½ inches. Diameter of drive gear, 4 inches. The chuck holds from 0 to 17/64 inches. The metal parts, with exception of gear, are polished. The gear is japanned, and is provided with a take up in case of wear. The handles are hard wood, stained in imitation of cocobola.

Price ..... per dozen, $21.00

HAND DRILL POINTS.



These points are intended for work on wood or soft metals only. A set of them is enclosed in the hollow handle of drills Nos. 1, 2 and 5.

Price of extra points ..... per set, $ .48
" " " ..... per dozen, .72

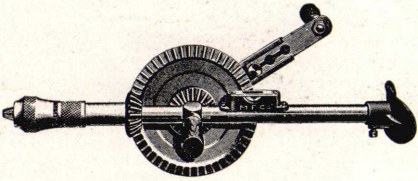
For work on hard metals twist drill points should be used.

D HANDLE FOR BREAST DRILLS.

Fits all numbers of breast drills.

Price ..... per dozen, $3.00

BREAST DRILL, No. 10.

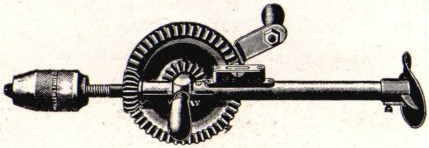


With ball-bearings, nickel plated stock and chuck, cocobola handles, extension crank, alligator jaws, which hold both round and square shanks, and a patent level attachment to enable the operator to see when the tool is held true. The gears are cut and are changeable from even to speeded 3 to 1.

Price ..... per dozen, $36.00

Put up 1/12 dozen in a box.

BREAST DRILL, No. 11.

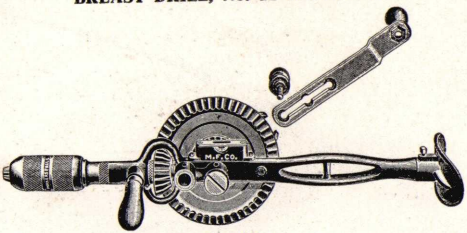


Drill No. 11 conforms to No. 10 described above excepting in the chuck and crank. The chuck has three jaws and holds round shanks from 0 to 3/8 inches. The crank is not of the extension pattern.

Price ..... per dozen, $36.00

Put up 1/12 dozen in a box.

BREAST DRILL, No. 12 IMPROVED.



BALL-BEARING

Changeable gear from even to speeded about 3 to 1.

Has cut gears, adjustable cranks and level attachment to show when being held true. The handles are cocobola, and the chuck nickeled.

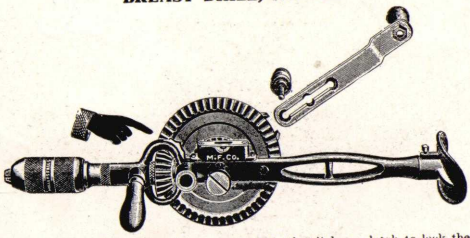
The chuck to this improved drill is of the same pattern as that which we use on the Master brace described on page 1. It centers and holds securely square shanked drills of all sizes, round shanks from ⅛ to ½ inch, and taper shanks of ordinary sizes. Everything about the tool will be found durable and nicely finished.

In ordering parts be careful to specify whether for No. 12 or No. 12 improved.

Price ---------- per dozen, $30.00

Put up one in a box.

BREAST DRILL, No. 012.

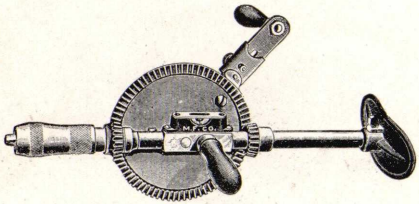


No. 012 differs from No. 12 improved only in that it has a latch to lock the gears when desired. The hand in the illustration points to the latch. This feature is often convenient when putting in or removing drill point or other tool.

Price ---------- per dozen, $33.00

Put up one in a box.

BREAST DRILL, No. 13.



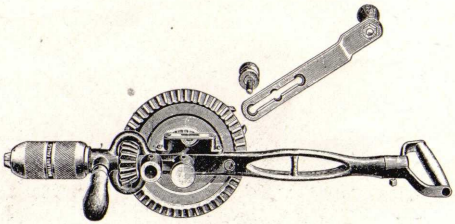
BALL-BEARING.

The drill is double geared and has a 6-inch drive-wheel giving speed at 4½ to 1. The gears are cut, the handles cocobola, and the stock and chuck nickel plated. Note the level attachment to show when the tool is being held true, also the extension crank.

Price ..... per dozen, $42.00

Put up one in a box.

BREAST DRILL, No. 15.

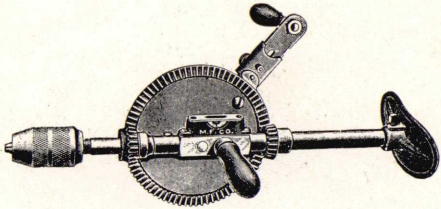


This drill is same in pattern and finish as No. 12 improved shown on page 23, with exception that it has a D handle instead of breast plate. We are furnishing considerable quantities of them for use in car shops. In ordering parts be careful to specify whether for No. 15 or No. 15 improved

Price ..... per dozen, $30.00

Put up 1/12 dozen in a paste board box.

BREAST DRILL, No. 130.

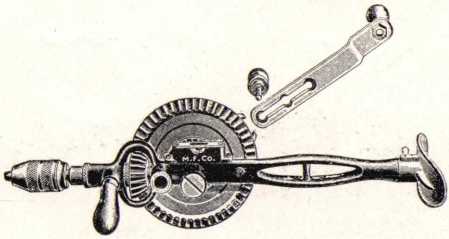


The only difference between this drill and No. 13 is in the chuck. The chuck shown above has three jaws. It holds all sizes of round shanked bits from 0 to ¼ inch inclusive, and will center them to a nicety.

Price ..... per dozen, $18.00

Put up one in a paste board box.

BREAST DRILL, No. 18.



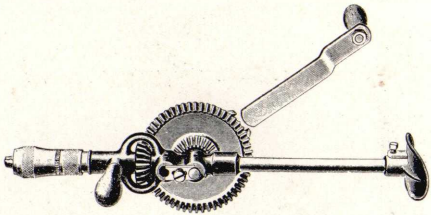
Excepting in the chuck, No. 18 breast drill is same in pattern and finish as our No. 12 improved described on page 23. The chuck is arranged with three jaws for round shanked points (only) from 0 to ¼ inch inclusive.

It will center accurately.

Price ..... per dozen, $36.00

Put up 1/12 dozen in a paste board box.

BREAST DRILLS, Nos. 19 and 190.



No. 19 has ball bearings and alligator jaws. The drive wheel is 5 inches in diameter. The gearing is changeable from even to speeded three to one. The crank is adjustable, permitting of variation in length of 3½ inches. The stock and chuck are polished. The hub casting is painted black and the gear and breastplate red

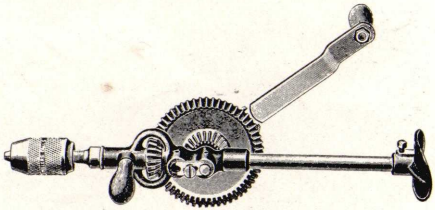
Price ..... per dozen, $21.00

No 190 is the same as No. 19, excepting that the chuck and stock are nickel plated.

Price ..... per dozen, $24.50

Put up one in a paste board box.

BREAST DRILLS, No. 29 and 290.



No 29 The chuck to No. 29 has three jaws, which hold round shanked bits from 0 to ½ inch, inclusive. In other respects the drill corresponds to No. 19, as above.

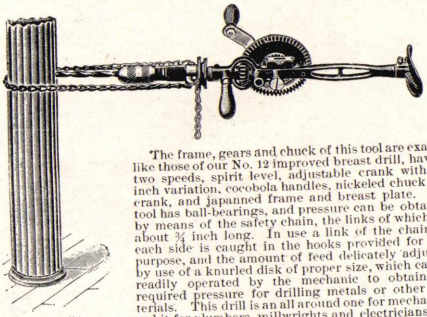
Price ..... per dozen, $27.00

No. 290 is the same as No. 29, with exception that the chuck and stock are nickel plated.

Price ..... per dozen, $30.50

Put up one in a paste board box,

COMBINATION BREAST AND CHAIN DRILL, No. 25.

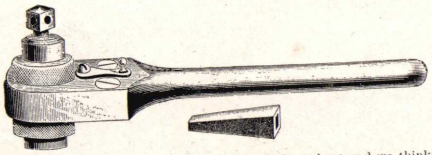


The frame, gears and chuck of this tool are exactly like those of our No. 12 improved breast drill, having two speeds, spirit level, adjustable crank with 2½ inch variation, cocobola handles, nickeled chuck and crank, and japanned frame and breast plate. The tool has ball-bearings, and pressure can be obtained by means of the safety chain, the links of which are about ¾ inch long. In use a link of the chain on each side is caught in the hooks provided for that purpose, and the amount of feed delicately adjusted by use of a knurled disk of proper size, which can be readily operated by the mechanic to obtain the required pressure for drilling metals or other materials. This drill is an all around one for mechanics, but we especially recommend it for plumbers, millwrights and electricians. It can be used equally well as a plain breast drill.

Price ..... per dozen, $45.00

Put up one in a box.

RATCHET DRILLS.



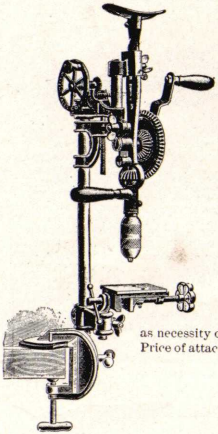
This improved ratchet drill is nickel plated throughout and we think we may say with modesty that it is the best finished and handsomest tool of the kind on the market. The merits of the tool are in keeping with the finish. The sockets are fitted for shanks ⅜ x ⅜ x 1½ inches (see Cleveland Twist Drill Co.'s No. 111, Morse Twist Drill Co.'s No. 109E, and Standard Tool Co.'s No. 104A). With each ratchet we now put up an extra socket to accommodate bit stock drills, for which no additional charge is made.

	No. 10,	No. 12,	No. 14,
Lever	10	12	14
Inches			
Price ..... each,	$4.00	$4.50	$5.00

Price of extra sockets, sold separate from ratchets, 25c. each.

Drills put up one in a paste board box.

UNIVERSAL HAND DRILL PRESS, No. 20.



No. 20.

The standard and frame in drill press as exhibited in illustration No. 20 was designed to apply to our Nos. 10, 12 improved, 18, 24 and 912 breast drills, so as to convert into a drill press or bench drill. The illustration shows our No. 12 improved breast drill thus converted. The other numbers mentioned can be converted with equal ease.

The bench clamp, vise rest and frame are all clamped to the main standard, and so can be moved up and down, or swung to the right or left, and by means of the thumb screws provided, clamped or secured at any desired point.

The table can be reversed to present either a vise or table, as the operator may require, and is hung on a pin off center to admit of a variety of positions.

The operator may, if desirable, work below the bench by dropping the frame and fixtures down on the standard, and securing the upper end of the same in the bench clamp. This is very convenient in bicycle repairing. In short, the number of positions, heights and adjustments that will suggest themselves as necessity demands, with this tool is astonishing.

Price of attachment only (**without breast drill**), each, $4.00

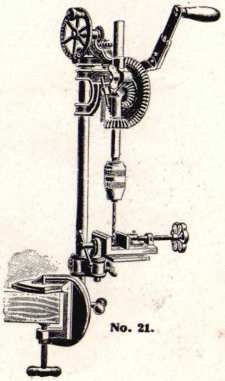
Put up one in a case

UNIVERSAL HAND DRILL PRESS, No. 21.

Cut No. 21 represents the Universal hand drill press with special drilling attachment provided for it. This drilling attachment has double gears (large 5 inches, small 2 inches in diameter), extension handle, three-jawed chuck, taking straight shank drills from 0 to ¼ inch.

Price of standard and drilling attachment complete.. $7.00

Put up one in a case.



No. 21.

BENCH DRILL PRESS, No. 22.

The drill press herewith illustrated is of very simple construction, and is made to meet the demands for a moderate priced, but effective drill. It is designed to be used in connection with our hand drills, Nos. 1, 2 and 5, any of which may be attached to the frame in a very few seconds.

The feed is supplied by a compound lever which is convenient, sensitive and effective.

The frame is made of steel and iron, japanned.

The distance between the chuck and table when hand drill No. 1 or 5 is used at highest point, is 7¼ inches. When hand drill No. 2 is used, 6½ inches.

Weight, 7½ lbs; height over all, from table, 15½ inches.

Packed in a telescope paper box 17⅛ x 7½ x 4¾.

Price of frame only		each,	$1.75
" "	complete with hand drill No. 3	"	2.75
" "	" " " " " 1	"	3.00
" "	" " " " " 5	"	3.25
" "	" " " " " 2	"	4.25

BENCH DRILL PRESS, No. 23.

This drill press is like No. 22 in construction, except that it has a permanent operating attachment with *geared* spindle and *drill chuck* holding drills from 0 to ⅜ of an inch.

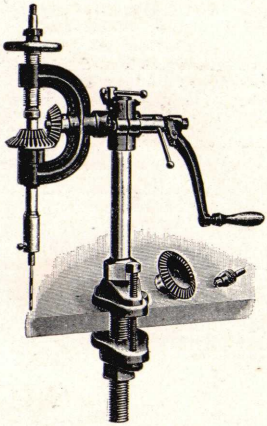
The distance from chuck to table with sliding frame at highest point is 6½ inches

The finish is japan and bright nickel.

Weight 8½ lbs. Boxed same as No. 22.

Price.....each, $3.50

ANGULAR AND RATCHET DRILLING MACHINES.

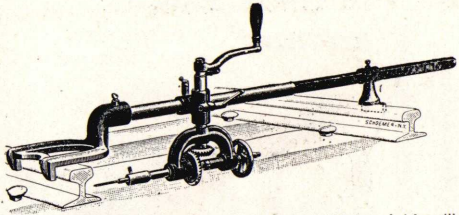


These machines have steel standards, shafts and spindles, the castings are substantial, and the workmanship throughout first-class. For repair work there is no more convenient tool of any description made. They are not only suitable for the bench but can be attached to broken machines and swung around so as to drill at a variety of angles. By attaching the crank to drill spindle, it can be used with or without ratchet. The hole in spindle is suitable for drills with ½ inch shanks. With each machine we send as sample one such drill ¼ inch, also a chuck to hold straight shanked drills from 0 to ½ inch. We will furnish machines to order (without extra charge) when desired with spindles bored for ⅝ inch shanks. When machines are made to order with spindles bored for taper sockets then the chuck and drill point mentioned above are omitted.

No. 1.	Speeded. Weight, 34 lbs. Drills up to ⅝ inch hole	$20.00
No. 2.	With two sets of gears making either speeded or geared back machine. Weight, 64 lbs. Drills up to 1 inch hole	25.00
No. 3.	Geared back. Weight, 108 lbs. Drills up to 1¼ inch hole	40.00
	Spindles to order with hole for taper socket when required for, extra, net	1.50

For prices of parts, see page 32.

TRACK DRILL No. 5.



Engineers and others familiar with the work the drill is intended for will at a glance see its utility and convenience. Two sets of gears go with each drill making it either speeded or geared back. It weighs 68 lbs. and will carry drills up to 1 inch. The hole in spindle is adapted for drills with shanks ½ x 2½ inches.

A chuck is furnished with each machine which will hold straight shanked drills from 0 to ½ inch.

Price ..... each, $25.00

For prices of parts see page 32.

MILLERS FALLS CHAIN DRILLS.

These drills can be fed automatically or with a hand feed at the option of the operator. The automatic feed is self-regulating, according to the size of the drill, feeding very rapidly or slowly as may be desired. The frame is japanned with polished socket; made in three styles:

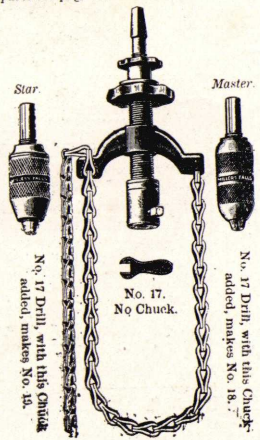
No. 17 chain drill with plain socket; ½ inch hole with set screw ..... each, $1.25

No. 18 is No. 17 with Master chuck added, for holding square and taper shanks, also round shanks from ⅛ to ⅛ inch ..... each, 2.25

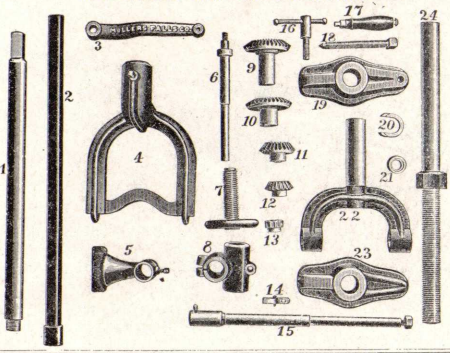
No. 19 is No. 17 with three jawed Star chuck added, for holding round shanks from 0 to ½ inch ..... each, 3.25

The chain supplied is extra heavy, and will not break.

Packed one in a box



PARTS AND PRICES OF ANGULAR DRILLING MACHINES AND TRACK DRILL.



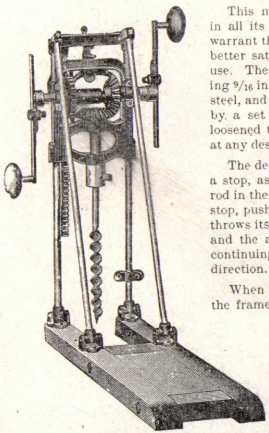
Part		No. 1	No. 2	No. 5	No. 3
1	Standard	$....	$....	$1.00	$....
2	Standard Extension	....	....	.65	....
3	Crank	.80	1.00	1.00	1.60
4	Track Shoe	....	....	2.00	....
5	Sliding Rest	....	....	.40	....
6	Cross Shaft	1.60	2.00	2.00	3.20
7	Feed Wheel	1.00	1.25	1.25	2.00
8	Double Joint	2.00	2.50	2.50	4.00
*9	Large Gear	.80	1.00	1.00	1.60
*10	Gear	....	.70	.70	....
*11	Gear	.45	.60	.60	.90
*12	Gear	....	.60	.60	....
13	Ratchet Gear	.40	.50	.50	.80
14	Ratchet Dog	.20	.25	.25	.40
15	Drill Spindle	1.80	2.25	2.25	3.60
16	Double Joint Screw	1.00	1.25	1.25	2.00
17	Crank Handle and Bolt	.20	.25	.25	.40
18	Clamp Screw	.30	.35	.35	.60
19	Upper Clamp	.50	.60	.60	1.00
20	Yoke	....	.40	.40	....
21	Ball-bearing Cup	.20	.25	....	.40
22	Fork Arm	2.60	3.25	3.25	5.20
23	Lower Clamp	.50	.60	.60	1.00
24	Standard and Nut	2.00	2.50	2.50	4.00

*In ordering parts, state weight of part wanted as well as number, that we may determine whether for machine Nos. 1, 2, 3 or 5.

In ordering gears state diameter and number of teeth.

Parts Nos. 10 and 12 go to make machines Nos. 2 and 5 speeded, and parts 9 and 11 to make them geared back.

MILLERS FALLS BORING MACHINE.



This machine has been fully perfected in all its parts, and is now sold with full warrant that it will do better work and give better satisfaction than any other kind in use. The upright posts are steel, measuring 9/16 in diameter; the angle rods are also steel, and attached to the casting at the top by a set screw. When this set screw is loosened the frame falls over, so as to bore at any desired angle.

The depth of hole to be bored is fixed by a stop, as shown on the right-hand upright rod in the cut. When the frame strikes this stop, push back the latch and the machine throws itself into gear by the use of a spring, and the auger is lifted out of the hole by continuing to turn the crank in the same direction.

When the auger is drawn from the hole, the frame hangs itself up until the machine is moved for the next hole; then it is dropped down by releasing the hook or thumb latch. At this point it is thrown out of gear by pressing the lifting gear to the left, and is then ready for more work.

As shown in the cut, the machine has adjustable cranks, which fully regulate its speed and power

As ordinarily made, this machine bores to depth of 11¼ inches, but at small additional charge can be made to order for greater depth.

We do not desire the reputation of making the cheapest goods in the market, but we mean to deserve the name of making the best.

PRICES.

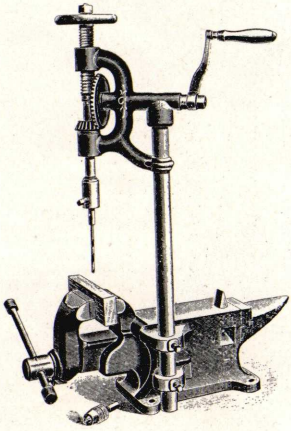
Machine, without augers				$7.50
Augers in sets	18	23	41	quarters
	$4.50	$5.50	$10.25	

SIZES OF AUGERS.

18	23	41
(1, 1½, 2)	(1, 1¼, 1½, 2)	(¼, ⅜, ½, ⅝, ¾, 1, 1¼, 1½, 1¾, 2)

ANVIL, VISE AND DRILL.

INSERTED STEEL VISE JAWS.

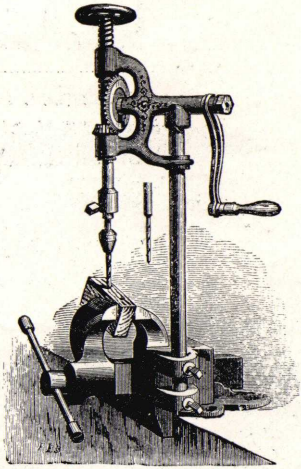


For miners, stove repairers, locksmiths, bicycle shops and a thousand other purposes, there is no more convenient tool than this anvil, vise and drill. The anvil has a steel face, 4 x 8 inches, the vise jaws are 3½ inches wide, and are steel faced. The drill standard and spindle are steel. The spindle is bored for drills with ½ inch shank. With each drill press we furnish chuck to hold drills smaller than ¼ inch. One ¼ drill with ½ inch shank (as sample) is furnished with every complete vise and drill.

Weight, of anvil, vise and drill,	80	pounds	Price, $18.00
" " and vise,	60	"	" 10.00
" drill press,	20	"	" 8.00

VISE AND DRILL.

INSERTED STEEL VISE JAWS.

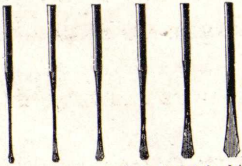


The drilling attachment shown above is a duplicate of the one described on opposite page (34). The vise has steel faced jaws, 3½ inches wide, which are offset so as to entirely overhang the screw box.

For many purposes this design will be found exceedingly convenient.

Weight of offset vise and drill,	61	pounds	Price,	$15.00
" " " alone,	41	"	"	7.00
" drill press,	20	"	"	8.00

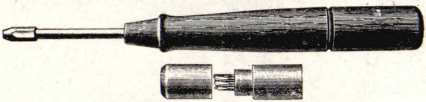
DIAMOND DRILL POINTS.



The cut represents one-half the size of the drill points.

Price for set of six drills, in a box..... $ .25

GRAVES' AUTOMATIC DRILL STOCK, No. 1.

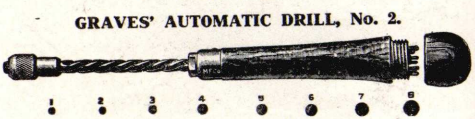


This is a most complete tool for bracket saw work. The stock is made of cocobola wood with steel spindle. The drill points are fastened by means of a steel thimble, which screws on the end of the spindle. It is easily worked with one hand, and will drill the most delicate wood without danger of splitting.

Price, with 12 drill points, assorted..... per dozen, $9.00

Put up one in a box.

GRAVES' AUTOMATIC DRILL, No. 2.



No. 2 is a large size, with hollow handle.

We are using the drill points and clingfast chuck described in connection with our automatic borers, on page 37, thus adding very much to the value of this tool.

Price, with 8 drill points..... per dozen, $18.00

Put up one in a box.

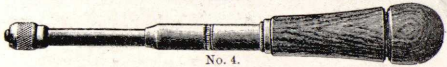
DRILL GAUGE.

With each boring tool a steel gauge is furnished, by the use of which one may determine the size drill point to use for any certain sized screw.

Directions.—Get the size of the screw by seeing which hole in the gauge it fits and then use the next smaller size drill point.

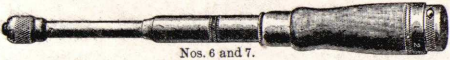
AUTOMATIC BORING TOOLS, Nos. 3, 4, 5, 6 and 7, WITH IMPROVED CHUCKS.

No. 3.



No. 4.

No. 5.



Nos. 6 and 7.

These tools are perfect as to quality and finish. We have adopted for a chuck a device which is very positive and quick working. The drill points can not be pulled out from this chuck or become loose.

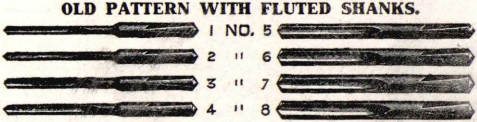
No. 3.	All metal handle with 8 points	per dozen,	$14.00
" 4.	Cocobola handle with cells for the 8 points	" "	18.00
" 5.	Solid cocobola handle and 8 points	" "	14.00
" 6	Cocobola handle with separate cells for points, and device for releasing any one of the 8 points from handle without disturbing the other numbers	" "	20.00
" 7.	Same as No. 6 excepting that it has stained handle instead of cocobola	" "	18.00

Put up one in a box.

BORING TOOL POINTS, NEW PATTERN.

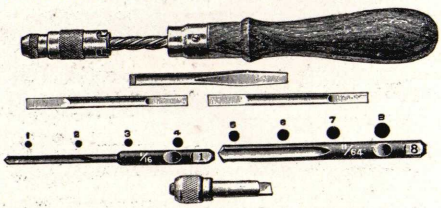
Price ..... { per set (8 points), $ .48
per dozen, .72

BORING TOOL POINTS, OLD PATTERN WITH FLUTED SHANKS.



Price ..... { per set (8 points), $ .48
per dozen, .72

AUTOMATIC SCREW DRIVERS, Nos. 11 and 12.

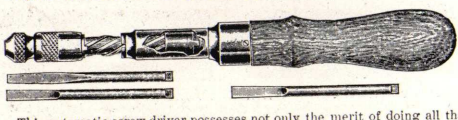


This tool is much like others of the same class; but it is more highly finished and better made than any heretofore put on the market. It has one addition, which is nearly indispensable for satisfactory work, that is a patent revolving sleeve which the left hand grasps when the tool is working. While this sleeve is a great advantage in driving screws, it also enables the tool to be used as an automatic drill. The only additional expense is for the drill points. There is also a locking device which prevents the screw driver from falling out of engagement when held perpendicular. All the metal parts are highly polished and heavily nickel plated. The handle is of cocobola. Full length extended 17 inches. The three screw driver bits which go with each tool are 4 inches long, and made to fit screws of varying sizes.

Price of No. 11, without drill points, but with 3 screw driver bits ..... per dozen, $15.00
Price of No. 12, with 8 drill points and 3 screw driver bits ..... " " 21.00

Packed one in a box.

AUTOMATIC SCREW DRIVERS, Nos. 20 and 21.



This automatic screw driver possesses not only the merit of doing all that any other automatic screw driver will do as as a plain, ratchet, or automatic screw driver, but also the advantage of being made with a cast interchangeable metal nut (as shown where cut away in the accompanying illustration), which can easily be replaced at small cost if in the course of time it should become worn.

These screw drivers are very durable, as well as elegant in appearance, being made from the best material throughout and highly finished.

Length No. 20, closed, 9¼ inches; extended 13 inches.
" " 21, " 10 " " 15 "
Price, No. 20, with 3 screw driver bits ..... per dozen, $12.00
" " 21. " " " " " " 14.00

Put up one in a box.

IN AND OUT SCREW DRIVER, No. 41.

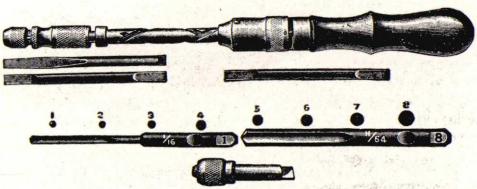
In producing this reversible screw driver we have attempted to correct the faults of similar tools already on the market. One of the objections to those heretofore made, with grooves crossing each other, has come from wear at the points of intersection. In our No. 41 there is really no such point; one of the grooves, being deeper cut than the other, preserves the entire individuality of each. It is simple in construction and simple to operate, the mere turning of the shell near the handle shifting the movement from right to left or vice versa. By turning the shell half way it locks the spiral so that it can be used as an ordinary driver, and at different lengths. By using a mechanical device we have tested this tool against a resistance equal to driving a 1½ inch screw. After giving it one hundred thousand movements or plunges we are unable to detect any wear.

With each tool we put up three bits, two of them double end, giving five points in all.

Price .....per dozen, $18.00

Put up one in a box.

IN AND OUT SCREW DRIVER, No. 42.

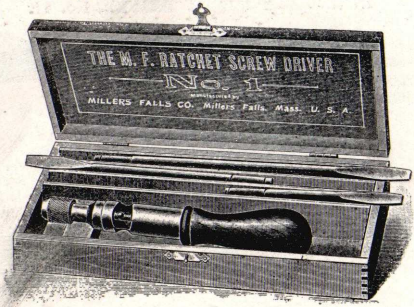


Screw driver No. 42, is same in every particular as No. 41, now so favorably known in the market, but has in addition a set of 8 drill points and a chuck to hold them, as illustrated above.

By the use of these extras the driver can instantly be converted into a wood boring tool which will be found most satisfactory.

Price .....per dozen, $24.00

RATCHET SCREW DRIVER, No. 1.



Ratchets right or left or can be made stationary. Whole length of handle 7 inches. The wood part is made of cocobola and the metal parts are heavily nickeled. Three bits are furnished, one each 5, 7 and 9 inches long These are also nickeled.

Price.....per dozen sets, $18.00
" of extra bits.....each, .20

Put up one set in a nice wood box.

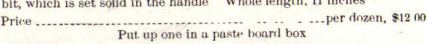
RATCHET SCREW DRIVER, No. 2.

No. 2 is similar in finish and construction to No 1, excepting that it has but one bit, which is set solid in the handle Whole length, 11 inches

Price .....per dozen, $12 00

Put up one in a paste board box

HAND FORGED ROUND SCREW DRIVER BIT.

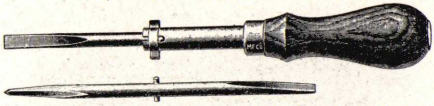


There is a special demand for a screw driver bit which will stand a severe strain. These bits are made to meet such want, and the quality warrants the prices we charge for them.

No. 1 5 inches long.....per dozen, $1.50
" 2. 8 " " " " 2.00

Put up one dozen in a box

DUPLEX SCREW DRIVER, Nos. 1 and 3.

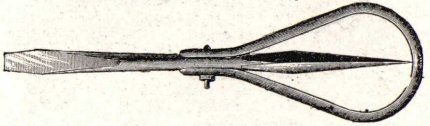


Generally when a screw driver is used, some tool is wanted to make a hole for the screw. This square reamer on the reverse end of the driver is better for that purpose than a gimlet or any other tool. The bit can be turned around instantly, so as to use either end. It is hand forged, carefully tempered, polished and nickel plated.

Price, complete, No. 1, cocobola handle ..... per dozen, $4.80
" " " 3, maple handle ..... " " 3.60
Bits alone, to fit handle ..... " " 1.80

Put up one in a box.

DUPLEX SCREW DRIVER, No. 2.

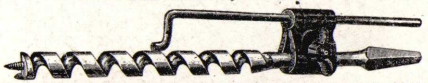


Screw driver and reamer combined. Both bit and handle made of tempered steel, polished and nickel plated. Whole length 4 inches.

Price ..... per dozen, $3.00

Each tool in a leather case.

BIT GUAGE, No. 1.

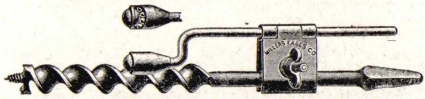


This cut shows the gauge in all of its parts. It will be seen that one bolt with thumb screw tightens the clamps on the gauge spindle and auger bit at the same time. It will fit any size bit and exactly gauge the depth of hole to be bored.

Price ..... per dozen, $9.00

Put up ½ dozen in a box.

ANTI-FRICTION BIT GAUGE, No. 2.



This gauge is provided with a large anti-friction steel ball in the end of the socket, which ball in turn runs on six smaller balls, as shown in sectional view of illustration, thus reducing the friction to a minimum. The object of these balls is to prevent defacing delicate or polished material when operating. The whole thing is highly polished and nickel plated, making a very beautiful and useful tool.

Price ..... per dozen. $5.00

Put up ½ dozen in a box.

STAR CHUCK, No. 5.

STAR CHUCK, No. 6.

STAR CHUCK, No. 7.

The chucks illustrated above have three steel jaws carefully adjusted in a socket to keep them in place, and so arranged as to open and close with the loosening or tightening of the chuck upon the spindle.

They are thoroughly good and substantial chucks at low prices, handsomely polished and nickel plated.

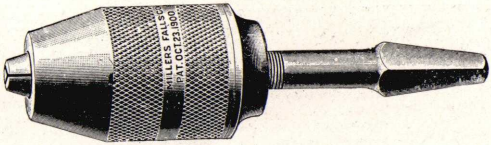
No. 5	holds from 0 to ¼	inclusive;	has shank	1½ x ½	...	Price, each,		$1.00
" 6	" " 0 to ⅜	"	"	"	3⅜ x ½	...	"	" 1.50
" 7	" " 0 to ½	"	"	"	4½ x ½	...	"	" 2.00

Put up one in a box.

Note.—We can furnish No. 5 chuck with 41/64 shank, No. 6 chuck with 41/64 shank, and No. 7 chuck with ⅞ or 41/64 shank, instead of as listed above, without additional charge. Special shanks, straight or taper, to order at 50c. in addition to regular charge.

In ordering taper shanks, be careful to advise us as to the exact taper wanted

STAR CHUCKS, Nos. 15, 16 and 17.



The chucks listed herewith match in every particular Nos. 5, 6 and 7 illustrated on opposite page, excepting that they have bit, instead of round shanks. These bit shanks permit of their use in connection with bit braces, breast drills and other tools. The chucks hold and centre accurately, the finest points.

Length of shanks: No. 15, 2 inches; No. 16, 2¼ inches; No. 17, 2¼ inches.

No. 15.	Holds from 0 to ¼ inch	each,	$1.50
No. 16.	" " 0 to ⅜ "	"	2.00
No. 17.	" " 0 to ½ "	"	2.50

Put up one in a box.

LATHE CHUCK, No. 150.

ILLUSTRATION HALF OF ACTUAL SIZE.

This tool is provided with a master brace chuck, and has a solid steel shank 15/16 x 4 inches.

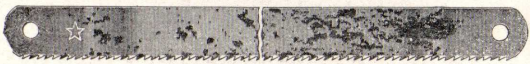
No additional charge will be made for these chucks with ½ inch or 41/64 inch shanks.

The chuck centers and holds square and taper shanks, also round shanks from ⅛ to ½ inch.

Price	each,	$1.50
Price, special shanks, straight or taper, to order	extra, net,	.50

Put up one in a box.

STAR HACK SAWS.



It is perhaps superfluous to speak about the quality of Star blades since they have been the standard the world over for more than twenty-five years.

We do, however, wish to call attention to the fact that we have made a vast stride forward since our catalogue No. 30 was issued. Notwithstanding this advance in quality, our increased manufacturing facilities enable us to make them at a much lower cost than at the date when prices which have heretofore ruled were established. Therefore we have decided to give the dealer and consumer the benefit of the reduced cost.

Compare the lists given below with former lists, as well as with lists on other brands.

Note.—For ordinary work blades with 14 teeth are furnished, but for cutting thin tubing or thin sheets of metal those with 24 teeth should be used. We make them with 14 and 24 teeth in all lengths, 6 to 12 inches. Both kinds have our patent set.

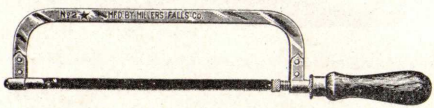
In filling orders we furnish blades with 14 teeth, unless they particularly specify 24 teeth, or fine.

N. B.—Blades and frames are in all cases billed separately.

Length of blade, ins.	6	7	8	9	10	11	12
Price, per dozen	$ .30	$ .32	$ .34	$ .38	$ .42	$ .46	$ .50
Price, per gross	3.50	3.75	4.00	4.50	5.00	5.50	6.00

Put up ½ gross in a box.

STAR HACK SAW FRAME, No. 2.



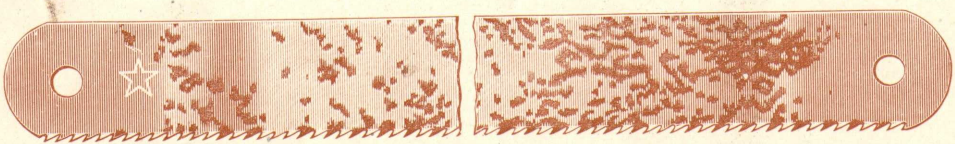
No. 2, solid frame, to hold 8 inch blades only, and face them in four directions. Polished and nickel plated. Cocobola handle.

For descriptions about straining, etc., see No. 6.

Price.....per dozen, $8.40

Put up one in a box.

Star Hack Saw Blade 12 x 5/8 For Machine Use



This is an all-round Blade suitable for all sorts of machine work, excepting on tubing with walls less than $^{1}/_{16}$ inch in thickness. The use of this Star Blade eliminates the necessity of carrying stocks of blades of varying widths and thicknesses and with different numbers of teeth to the inch. It is of the same excellency of quality as other Star Blades which we have been supplying for so many years and which are so favorably known everywhere, at home and abroad.

Price ---------- per gross, $8.00

Put up ½ gross in a box.

PATENT STAR HACK SAW FRAMES, Nos. 4A, 4B and 4C.

This No. 4 is a patent cast iron frame, and so constructed as to face blades in four different directions. The pins which hold the blade are fast in the frame and cannot drop out. It is a very stiff and desirable frame with japan finish.

No. 4A.	For 8 inch blades	per dozen,	$3.00
" 4B.	" 9 " "	" "	3.00
" 4C.	" 10 " "	" "	3.00

Put up six in a box.

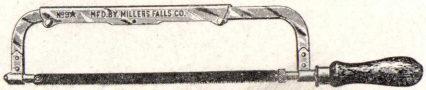
STAR HACK SAW FRAME, No. 6.

Frame No. 6 is stiff and strong. It is highly polished, heavily nickel plated, has a cocobola handle, and will face blades in four directions. Adjustable to take blades from 6 to 12 inches. Our present method of straining blades by simply turning the handles will be found a great improvement over original pattern with winged nut. Note the ring which turns down over end of the blade, and prevents the latter from falling off the pin when adjusting.

Price ---------- per dozen, $12.00

Put up one in a box.

STAR HACK SAW FRAME, No.



This frame holds blades from 8 to 12 inches in length. It is an extension frame covered by a steel sheath, as shown in the cut. The sheath makes it very stiff, and at the same time very light. It is polished and nickel plated. The blades may be faced in either direction. For description about straining, etc., see No. 6.

Price ---------- per dozen, $12.00

Put up one in a box.

STAR HACK SAW FRAME, No. 10.

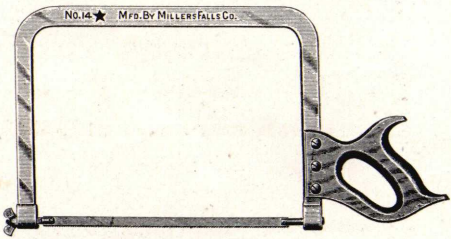
We offer this as the best extension frame in the market. It is light and quickly adjusted, having strength in the middle, where strength is needed It is made of tempered steel, polished and nickel plated. The handles are cocobola wood, highly finished.

It carries blades 6, 7, 8, 9, 10, 11 and 12 inches long, and is marked for the different lengths. For description about straining, etc., see No. 6.

Price ..... per dozen, $12.00

Put up one in a box.

STAR HACK SAW FRAME, No. 14.

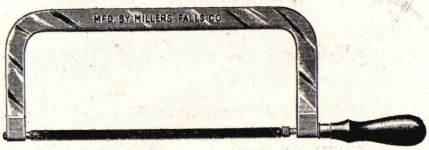


Frame No. 14 is adapted for large work, such as cutting off rails, beams, etc. The back is polished and nickel plated, and the handle beech wood. Measurement between back and saw points, 10¼ inches. Carries 12 inch blades.

Price ..... per dozen, $18.00

Put up one in a paste board box.

STAR HACK SAW FRAME, No. 15.



For 12 inch blades only. The back of this frame is made from heavy, stiff stock and will stand any necessary strain. Measurements between the back and points of the blade 5¼ inches. Size of the handle conforms to dimensions of the frame. Polished and nickel plated.

Price ..... per dozen, $15.00

Put up one in a box.

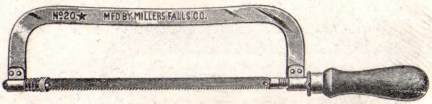
STAR HACK SAW FRAMES, Nos. 17, and 18.

Long experience in supplying hack saw frames has taught us that those with heavy, stiff backs give best satisfaction. Nos. 17 and 18 are made to conform with this idea. The device to prevent the blade from slipping off the pin when adjusting will be found convenient. The backs are polished and nickel plated, and the handles hardwood stained to imitate cocobola.

No. 17. Arranged for 9 and 10 inch blades ..... per dozen, $10.00
" 18. " " 11 and 12 " " ..... " " 12.00

Put up one in a box.

STAR HACK SAW FRAME, No. 20.



No. 20 is also of the heavy pattern described on preceding page. The handles are cocobola and the metal parts polished and nickel plated It is arranged for 8 and 9 inch blades.

Price ..... per dozen, $9.00

Put up one in a box

STAR HACK SAW FRAME, No. 25.

This is a high grade frame at small price It has a stiff steel back polished and nickeled, a hardwood handle stained in imitation of cocobola, and is very attractive in appearance. Arranged for 8 inch blades only, distance between back and teeth 3 3/16 inches.

Price ..... per dozen, $4.80

Put up 1/12 dozen in a box.

STAR HACK SAW FRAME, No. 27.

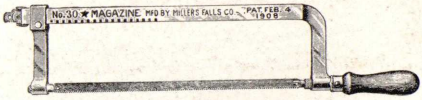
No. 27 is of the extension pattern, and takes blades all lengths from 8 to 12 inches inclusive, In material and finish it corresponds with No. 25, described above

Price ..... **per dozen, $9.00**

Put up 1/12 dozen in a box,

MAGAZINE STAR HACK SAW FRAMES, Nos. 28, 29 and 30.

Patented February 4, 1908.



These frames have magazine backs for the reception of one-half dozen or less blades. The backs are made from rectangular tubing and are hollow. The frames will be found most convenient, enabling one to always find his saw blades with him in an available place.

No. 28 has japanned clamps and ends. The balance of the frame is polished and nickeled. The handle is made from imitation cocobola. It takes blades from 6 to 9 inches inclusive. Depth from back to cutting edge 3¼ inches.

Price ..... per dozen, $15.00

No. 29 is same as No. 28 excepting that it is arranged for blades 8 to 12 inches in length.

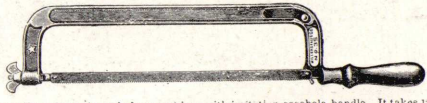
Price ..... per dozen, $15.00

No. 30 is same in design as Nos. 28 and 29, but the frame is polished and nickeled through out and the handle is cocobola wood.

Price ..... per dozen, $21.00

All numbers put up one in a box.

MAGAZINE STAR HACK SAW FRAME, No. 35.

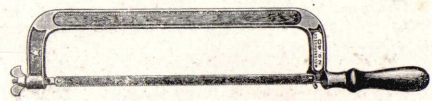


Our No. 35 frame is made from cast iron with imitation cocobola handle. It takes 12 inch blades only. The distance between the back of the frame and points of teeth is 2⅝ inches. The magazine is formed by a deep recess cast on each side of the back of the frame, in which six 12 inch blades may be placed for storage, three on each side. The blades are held in the frame by a flat retaining spring. This is a very desirable and presentable tool.

Price ..... per dozen, $5.40

Put up one in a box.

MAGAZINE STAR HACK SAW FRAME, No. 40.

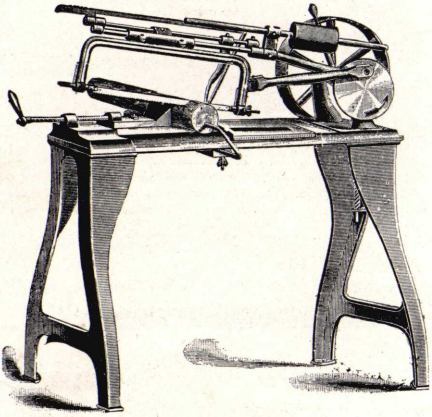


Frame No. 40 is same in every respect as No. 35, with exception of the method in which blades are retained in the magazine. In No. 40 they are held by simply springing them in shields at the ends of the recesses.

Price ..... per dozen, $5.40

Put up one in a box.

THE STAR POWER HACK SAW.



Probably there is no more popular or satisfactory machine of any description made than the Star power saw, as per illustration above. It adapts itself to all kinds of work and cuts all shapes and sizes up to 4½ inches in diameter. It is self-feeding, requiring no attention while making a cut, and stops automatically when the work is completed. Blades used in the Star power saw get fair treatment and the saving made in them in this way will soon pay for a machine when there is much work to be done. It is arranged for blades either 10, 11 or 12 inches in length

Six 12 inch blades are furnished with each machine.
The speed recommended is 45 strokes per minute.
Size of pulley, 13½ x 2⅛ inches. Net weight, 168 pounds.

Price ..... each, $25.00

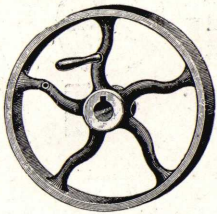
For prices of parts see page 52.

BAR REST.

To be used in connection with power saw to support long pieces to be cut. It is adjustable to various heights.

Price ..... each, $1.50

HAND WHEEL FOR POWER SAW.

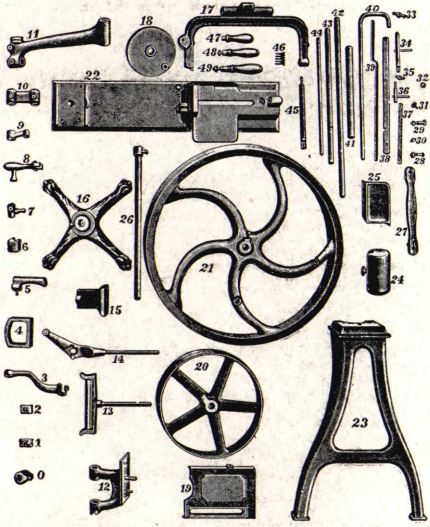


We are occasionally asked for power saws to be run by hand power. For such work we furnish a heavy drive wheel, and while we do not claim the work can be done faster than with the ordinary hand saw frame, it can be done more easily, and with saving of blades.

Price of Machine with hand wheel	$27.50
" Hand wheel only	4.50
" Pulley only	2.00

Any of our machines can be used with either hand wheel or pulley.

PARTS OF STAR POWER HACK SAW AND PRICES.



No.			No.			No.		
0.	Clutch Collar	$ .40	18.	Face Plate	$ .75	34.	Long Stud	$ .15
1.	Elevator Stop	.25	19.	Sliding Frame	.50	35.	Short Stud Nut	.08
2.	Frame Clamp	.15	20.	Pulley	2.00	36.	Short Stud	.15
3.	Long Guide	.90	21.	Hand Wheel	4.50	37.	Short Strap	.08
4.	Loose Vice Jaw	.75	22.	Bed	5.00	38.	Elevator Bar	.25
5.	Lift Handle	.30	23.	Leg	2.25	39.	Long Strap	.15
6.	Gauge Clamp	.25	24.	Weight	.90	40.	Gauge Rod	.40
7.	Short Guide	.30	25.	Tool Tray	.30	41.	Arbor	.30
8.	Vise Wrench	.25	26.	Rest Standard	.30	42.	Weight Rod	.90
9.	Short Yoke	.30	27.	Wood Pitman	.30	43.	Large Bearing Rod	.45
10.	Long Yoke	.40	28.	Small Pitman Bolt	.15	44.	Small Bearing Rod	.40
11.	Arm	2.25	29.	Large Pitman Bolt	.25	45.	Vice Screw	.45
12.	Standard	1.90	30.	Dog	.08	46.	Clutch Collar Spring	.08
13.	Rest Yoke	.75	31.	Malleable Thumb Screw	.08	47.	Clutch Lever Handle	.15
14.	Clutch Lever	.75				48.	Pulley Bolt and Handle	.30
15.	Vise Jaw	.45	32.	Guide Screw and Nut	.15	49.	Hand Wheel Bolt and Handle	.30
16.	Rest Base	.90	33.	Gauge Clamp Nut	.15			
17.	Frame	3.00						

ECONOMY BUTCHER SAW BLADES.

FORMERLY PUT UP UNDER STAR BRAND

Time and money are wasted in refiling butcher saw blades when you can buy a new Economy blade for less than the cost of one filing. Economy blades are not intended to be refiled, they are made hard enough to do three or four times as much work before becoming dull as the ordinary blade is capable of doing under same conditions.

Supposing you have paid for forty filings in doing the amount of work that one dozen Economy blades will accomplish, then how much are you out? Consider also the convenience of always having sharp saws at hand. Made in widths of ½ and 11/16 inch.

The ½ inch have 14 teeth to the inch.
The 11/16 inch have 9½ teeth to the inch.

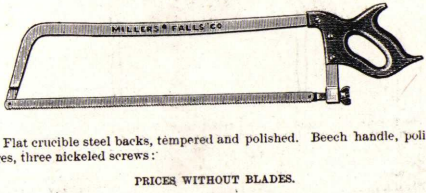
Both widths No. 24 gauge.

Length of blade, ins.	14	16	18	20	22	24	26
Price, per dozen	$ 1.08	$ 1.08	$ 1.20	$ 1.20	$ 1.32	$ 1.32	$ 1.44
Price, per gross	12.96	12.96	14.40	14.40	15.84	15.84	17.28

N. B.—When widths are not specified on orders we send 11/16.

Put up ½ gross in a box.

STAR BUTCHER SAW FRAMES.



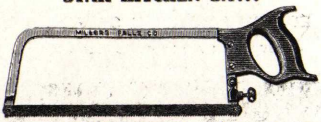
Flat crucible steel backs, tempered and polished. Beech handle, polished edges, three nickeled screws.

PRICES WITHOUT BLADES.

Inches	14	16	18	20	22	24	26
Per dozen	$11.00	$12.00	$13.00	$14.00	$15.00	$16.00	$17.00

Put up ½ dozen in a box.

STAR KITCHEN SAW.



Steel frame polished, with beech handle. It has what most other kitchen saws do not have—an arrangement for straining the saw, which adds much to its value.

Price of 14 inch frames, with one blade.....per dozen, $4.00
" 14 " blades..... " " 1.08

Put up ½ dozen in a box.

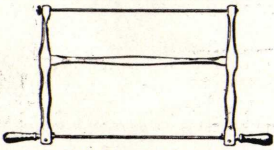
STAR DEHORNING SAW.

Steel frame with rough nickel finish. It has a beech handle, and Star blade 10 inches in length.

Price.....per dozen, $5.00
Extra blades..... " " .85

Put up ½ dozen in a box.

TURNING SAWS.

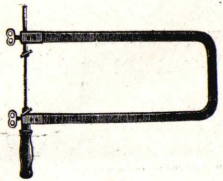


The frames are made of birch wood with ebonized handles. There is an index on each handle to show the operator just how far to turn it. The friction is regulated by screws. It is a superior tool in every way and has become popular.

Frames with blade complete, ins.	12	14	18	20	22	24
Per dozen	$11.00	$11.50	$12.00	$12.50	$13.00	$13.50
Blades, ins.	12	14	18	20	22	24
Per dozen	$1.45	$1.60	$2.00	$2.25	$2.50	$2.80

Frames put up one in a box.

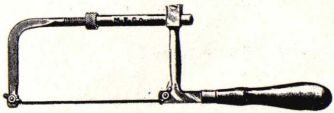
SPRING STEEL BRACKET SAW FRAMES.



Parts are interchangeable. The fact that repair parts can be inserted in a moment's time adds to the value of our frames.

Inches	8	10	12	14	16
Per dozen	$13.20	$14.40	$15.60	$16.80	$18.00

JEWELERS' SAW.



This saw is made of forged spring steel, with cocoboba handle. It is nicely polished and nickel plated, and will hold saws from 4 to 6 inches in length.

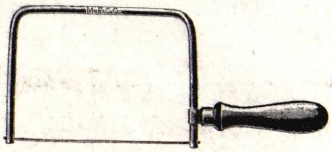
Price ..... per dozen, $9.00

Put up ¼ dozen in a box.

JEWELERS' SAW BLADES.

Nos. 000 to 6, inclusive ..... per gross, $1.25

COPING SAW, No. 40.

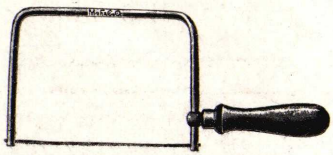


The frame is 4 inches deep. It is made of steel wire, which is nickeled. The handle is hardwood stained.

Price, complete with 1 dozen 6 inch blades.....per dozen, $3.75

Put up 1 dozen in a paste board box.

COPING SAW No. 41.



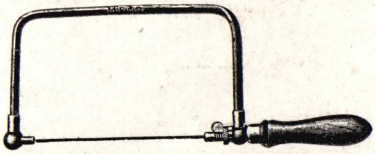
The ball end of the handle stud through which the wire frame passes gives a firm support to the frame, and also adds much to the appearance of the tool.

Size and material same as No. 40 described above.

Price, complete with 1 dozen 6 inch blades.....per dozen, $4.75

Put up 1 dozen in a paste board box.

COPING SAW, No. 42, BALL-BEARING.



This coping saw frame has ball-bearings under the head of the outer draw bolt, so the frame revolves automatically without reference to the angle of the blade, and according to the requirements, as the work is being done. When desired, the frame may be made absolutely rigid.

The automatic revolving of the frame is a great advantage as it obviates the necessity of stopping work to change the angle of the blade in the frame when operating in various directions.

To use the frame, insert the blade, then strain the same to the required tension by use of the handle, and when the tension is correct, turn down the knurled nut allowing the small end of wing gib to enter one of the slots in draw bolt. This will prevent the handle from turning backward off the bolt when using. Two of the slots in draw bolt are deeper than the other two, and are to be used in making frame rigid by allowing end of the gib to go down through same into the "V" slot in clamp

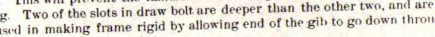
This frame is certainly a great improvement over any device in the market both in the way of time saving and convenience

Three No. 60 blades are furnished with each frame.

Price ..... per dozen, $12.00

Put up ¼ dozen in a box

COPING SAW BLADES.



No 50, 6 x 1/16 inches, turned ends, for frames Nos. 40 and 41

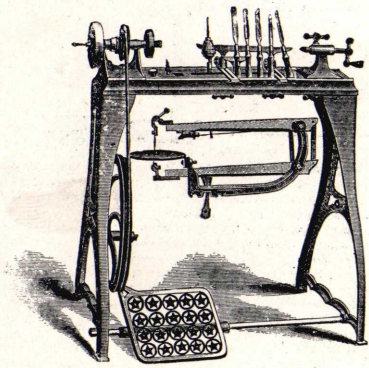
Price ..... per gross, $2.00

No. 60, 6 x 3/32 inches, with pins in the ends.

Price ..... per gross, $7.50

These No. 60 blades can be used in any 6 inch coping saw frame. For general use they will be found very much more satisfactory than the finer sort, cutting both faster and straighter; they are also more durable

GOODELL LATHE AND SAW ATTACHMENTS.



This lathe is patterned almost exactly after the latest improved lathes now used in the best machine shops and pattern makers' rooms. The large drive wheel has two grooves of varying depths on its face, to give a change of speed, as the belt runs from it to the cone pulley on the lathe head. The lathe head is provided with a two inch face plate, a spur center, a screw center for turning cups, and also a very nice drill chuck to hold from 0 to ¼ inch round twist drills for drilling wood or iron. It also has on the outer side of the pulley a 4½ x ⅞ inch emery wheel and a drill spindle, with chuck to hold drill points for wood drilling. The tail stock has a screw-feed center, which is secured at any point desired by a clamping arrangement like that on the modern engine lathes. It is also provided with a long and short tool rest, five turning tools, wrench, drill points, etc., etc. Swing of lathe, 5 inches. Length of bed, 24 inches. Distance between centers, 13½ inches.

The scroll sawing attachment, as shown in the cut, is secured to the lathe bed by one bolt, and can be put on or off at pleasure. This attachment has all of the improvements found in any of our scroll saws.

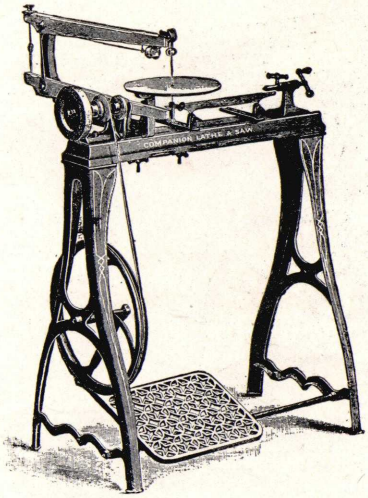
The circular saw attachment consists of a saw table 6 x 7 inches, a saw 3 inches in diameter, and a saw arbor. The lathe rest socket is used to support the table.

This lathe is thoroughly built and highly finished, the polished parts being nickel plated. Weight, lathe and saw boxed 78 lbs.

Price of Lathe and lathe tools		$10.00
"	Scroll saw attachment	1.50
"	Circular saw attachment	1.00

In ordering please state whether either or both of the saw attachments are wanted. For parts and price see page 65.

COMPANION LATHE AND SAW ATTACHMENTS.



The Companion lathe is built on same castings as the Goodell described on page 58, but it is not so highly finished. Neither do we furnish chuck with this lathe, or more than three turning tools.

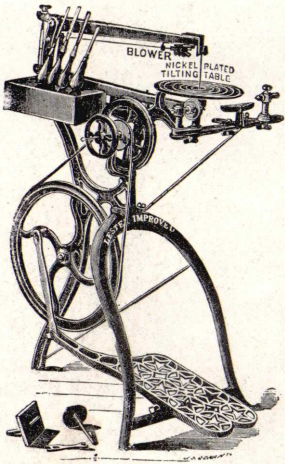
Thousands of them have been sold, and so far as we know none has failed to give satisfaction. Weight of lathe and saw boxed, 78 lbs.

Price of Lathe and tools		$7.00
"	Scroll saw attachment	1.50
"	Circular saw attachment, same as described on opposite page	1.00

State in ordering if either or both attachments are wanted.

For parts and prices see page 65.

LESTER IMPROVED SAW AND LATHE.



This machine is adapted alike to the use of either AMATEURS OR MECHANICS, and will be found very convenient in PATTERN MAKING.

The Lester saw is made of iron and steel, except the Pitman and arms, which are ash. The IRON WORK is nicely japanned black with stripes of red and gilt. The WOOD WORK is varnished, bringing out the beautiful grain of the ash.

The DRIVING WHEEL is 15 inches in diameter, and weighs 13 pounds. The TREADLE is made of IRON, from a new and handsome pattern.

The SCROLL SAWING ATTACHMENT is provided with a TILTING TABLE for inlaid work, the arms swinging 18 inches in the clear. A dust blower which works automatically. The clamps will hold the coarsest or finest saw perfectly, while they are made adjustable to the right or left, or backwards and forwards, so that the blade may be kept in line. This saw will cut lumber from one-sixteenth inch to one-half inch in thickness.

The CIRCULAR SAW ATTACHMENT consists of a saw three inches in diameter, and an iron table, three by four and one-half inches. This saw will cut lumber up to one-quarter inch.

The machine is also furnished with a SOLID EMERY WHEEL and DRILLING ATTACHMENT, accompanied by six best Stubbs steel drills of assorted sizes.

The LATHE ATTACHMENT is provided with iron ways and rests, steel centers, and three fine steel turning tools. Length of bed, 15 inches. Distance between centers, 9 inches. Swing, 3 inches. Length of slide rest, 4 inches.

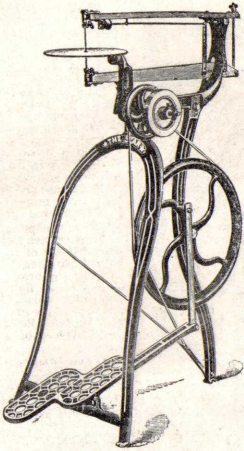
The following parts are supplied with each machine, viz.: twelve saw blades, one wrench, screw driver, three sheets of designs, and a nice box for the small tools.

When shipped it is taken apart and packed in a box, but can easily be set up by following the directions accompanying each machine.

Price of saw and lathe complete	$10.00
Price for the saw only, without lathe and circular saw	8.00
When desired we furnish with the lathe a very nice drill chuck holding from 0 to ¼ inch for working metals and a tail stock with screw center, for extra	2.00
We also furnish a larger *table for circular saw*, 6 x 7 inches, provided with a guide for sawing straight edges, for extra	.50

For parts see page 66.

THE STAR SCROLL SAW.



Our attention having been called to the demand for a machine of a little higher grade than the Rogers saw, we now offer the Star to meet this want. The peculiar advantages of the Star over the Rogers may be summed up as follows:

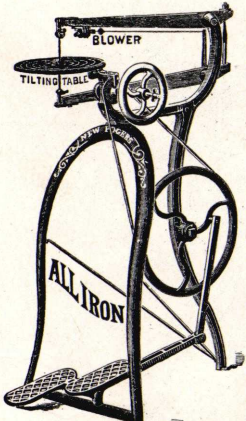
1. In-method of hanging the arms, giving them free and easy movement.
2. In adjustment of arms so that they may be kept parallel with each other.
3. Heavier drive wheel for heavier work.
4. Two balance wheels, one each iron and emery, the extra weight of additional wheel giving steadiness to the motion.
5. The emery wheel is fastened by adjustable clamps which can also be used for holding various other sizes of emery wheels, grindstones, buffing wheels, etc.

To adjust the arms all that is necessary is to loosen the bolt which goes through the upper arm in front of casting, and crowd the arm sideways either to right or left, and into line with the lower one; the hole in casting is elongated to permit of change in position as described. The table is nickel plated, and the general finish of the saw same as other machines made by ourselves. Weighs, net 37 lbs. and boxed 55 lbs.

Price ---------- each, $5.00

For parts see page 67

THE NEW ROGERS SAW.



The entire frame work of the Rogers saw is made from iron, painted and japanned black, and ornamented with red and gilt stripes.

The arbors, etc., are made of steel, and are carefully gauged and fitted to the bearings.

The arms and Pitman are of the best *selected ash*.

All parts are made to interchange.

While our jig saw possesses *every improvement and advantage claimed* for any other in the market, we further claim the following points of superiority, viz.:

1. The *bearing to the arms* are carefully sized to bring them in perfect line. (This is a vital point in the construction of any jig saw.)

2. We provide each machine with a *dust blower*, which is a very *great advantage*.

3. Our machine has a *jointed* stretcher rod, which allows the operator to throw the upper arm out of the way when adjusting his work or saw. This joint also permits the machine to work much more freely than with a straight iron rod.

4. Our clamps have a *hinged jaw*, which overcomes the disagreeable raking overthrow of the blade, which is unavoidable when the saws are secured rigidly in the arms. Saw blades are not nearly so liable to break when clamps have this joint. Thus a *large percentage* of the *expense* of runing the saw is saved. Besides this the saw runs *much easier*, the swing coming at the *hinge* instead of bending the blade at each stroke of the saw.

5. Our attachment for *drilling* is on the *right hand* side of the machine, which for convenience, is an obvious advantage.

6. We use no *pins* in the construction of our machine, but prefer the durability of nicely fitted *screws* and *bolts* in securing each part.

7. Each machine is *set up* and *run* and *carefully inspected* before leaving our works. It is then taken down and shipped in boxes.

These points of superiority are neither possessed by nor claimed for any other cheap saw.

While the *New Rogers Saw* is very rich, though not gaudy in appearance, it has been more especially our object to make, for the least possible money, a saw characteristic for its compactness, strength and durability, ease of action, and firmness when in operation.

With each machine we give 12 saw blades, wrench, sheet of designs, and three drill points. The saw alone weighs 25 lbs.; saw and box together 42 lbs.

Price of No. 1 Rogers saw ---------- $3.50.
" No. 2 " " with balance of emery instead of iron, and with tilting table nickeled instead of japanned.. 4.00

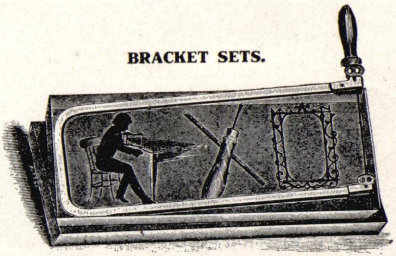
For parts see page 66.

CRICKET SAW.

To meet the demand for a cheap and good foot power saw, we have made an all-iron machine which we offer for $2.50. The finish is the same as that of our Lester and Rogers saws. It has an iron tilting table, second growth ash arms, eighteen inches long, improved clamps, etc. Weight of saw, seventeen pounds; weight when boxed, thirty-five pounds. Boxed for shipping without extra charge.

Price..... $2.50

BRACKET SETS.



No. 1. Pleasure and Profit set; frame rough nickeled, with japanned handle, box same size and same contents as No. 2.

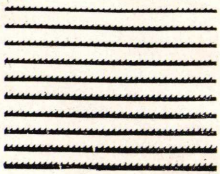
Price.....per dozen, $10.00

No. 2. These sets are packed in paper boxes, and embrace a spring steel saw frame, polished and nickel plated, 5 x 12 inches, having patent clamps for holding the saw blades, and rosewood handle, three sheets of designs, embracing a great variety of fancy and useful articles; twelve saw blades, one awl, one sheet of impression paper.

Price.....per dozen, $15.00

STAR BRACKET ★ SAW BLADES.

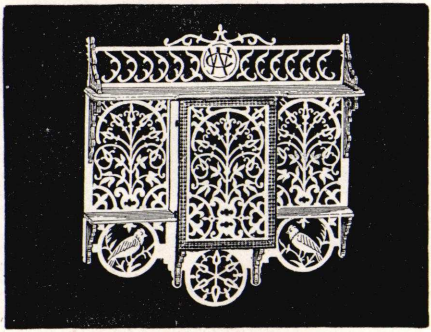
Are now demanded in quantities from most remote countries.
They have no equals for speed, durability, uniformity, and smoothness of work.



Nos. 000 to 6		per gross,	$1.00
"	7	" "	1.10
"	8	" "	1.20
"	9	" "	1.30
"	10	" "	1.40
"	11	" "	1.50
"	12	" "	1.60

Put up 1 gross each size in a package and 10 gross in a box.
Also put up in grosses, assorted Nos. 1 to 6 and 10 gross in a box.

DESIGNS FOR SCROLL SAWING, CLOCK MOVEMENTS, ETC.



No. 215 WALL CABINET.

We are publishers of Bowman's and Russell's designs, comprising a large variety.

We also carry a stock of clock movements of a variety of styles and sizes, suitable for cases made from designs mentioned above; also mouldings for trimming cases, boxes, etc.

Catalogues, showing designs and mouldings in miniature and describing clock movements, will be furnished on application.

PRICE LIST OF FANCY WOODS.

NAME OF WOODS		PLANED TO THE FOLLOWING THICKNESS.		
		1/8 inch.	3/16 inch.	1/4 inch.
Black Walnut	per square foot	$ .11	$ .13	$ .14
White Holly	" " "	.12	.14	.16
Poplar	" " "	.04	.05	.06
Plain White Maple	" " "	.06	.08	.09
Oak	" " "	.09	.10	.12
Cherry	" " "	.09	.11	.13
Mahogany	" " "	.12	.14	.16
Bird's Eye Maple	" " "	.12	.15	.16
Cocobola	" " "	.16	.19	.22
Rosewood	" " "	.24	.27	.34
Amaranth	" " "	.16	.20	.25
Satin Wood	" " "	.24	.27	.30
Tulip	" " "	.40	.46	.57
Ebony	" " "	.50	.57	.68

PRICES OF GOODELL & COMPANION LATHE PARTS.

NAME OF PARTS.		Companion.	Goodell.
Lathe Bed		$ .75	$ .75
Legs	each (2)	.75	.75
Treadles		.50	.50
" Rod		.15	.20
" Caps	each (2)	.05	.05
Driving Wheel		1.25	1.25
" " Bolt		.15	.15
Emery Wheel		.40	.40
Head Block		.20	.25
" " Spindle and Face Plate		.25	.25
" " Spindle Cone Pulley		.15	.20
Tail Block		.20	.25
" " Spindle and Crank		.20	.30
" " Spindle Binder		.10	.15
Long Rest		.20	.30
Short Rest		.10	.15
Rest Sockets	each (2)	.15	.15
Spur Center		.20	.20
Screw Center for Cups		.15	.15
Star Chucks		....	2.00
Saw Attachment Arm Casting		.50	.50
Arms	per pair	.30	.30
Table		.60	.60
Stretcher		.15	.15
Clamps	per pair	.25	.25
Bolts		.03	.05
Turning Tools	(5)	....	1.25
" "	(3)	.75	....
Arm Bolts and Nuts		.06	.06
Belt		.15	.15
Drills	per dozen	.50	.50
Pitman, Long		.10	.10
Pitman, Short		.05	.05
Pitman Screws		.05	.05
Screw Driver		.25	.25
Blower		.25	.25
Table Bolt		.03	.03
Wrench		.06	.06
Saw Guide (New Pattern)		.10	.10
Arm Spring		.05	.05
Winged Drill Nut		.05	.05

LESTER SAW REPAIRS.

Arms, per pair	$ .30
Arm Bolts and Nuts	.06
Arm Spring	.05
Balance Wheel	.50
Belt	.15
Brace	.10
Circular Saw	.25
" " Arbor	.15
" " Table	.12
Clamps, per pair	.25
Drills, per dozen	.50
Drill Nut	.05
Drive Wheel Arbor	.15
" "	1.25
Emery Wheel	.40
Frame	1.50
Front Leg	.85
Lathe Bed	.35
" Head Stock	.25
" Tail Stock	.16
" Rest	.05
" Rest Socket	.10
" Pulley	.10
" Tail Center	.10
Lathe Spur Center	$ .20
Lower Arm Guide	.05
Locking Bolts	.03
Pitman, Long	.10
" Short	.05
Pulley	.10
Pitman Screws	.05
Rest Socket Bolt	.05
Saw Guide	.10
Screw Driver	.25
Scroll Saw Table, Nickel	.65
" " " Guide	.20
Spindle and Crank	.20
Stretcher	.15
Stove Bolts, each	.02
Treadle Caps, per pair	.10
"	.50
Tool Box	.12
Blower	.25
Table Bolts	.03
Thumb Nuts	.05
" Screws	.05
Turning Tools, per set (3)	.75
Wrench	.06

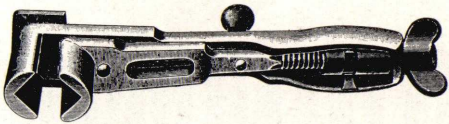
ROGERS SAW REPAIRS.

Arm Bolt	$ .02
Arm Casting	.40
Arms, per pair	.30
Arm Spring	.05
Back Leg	.30
Balance Wheel, Iron	.25
" " Emery	.40
Belt	.15
Brace	.15
Blower	.20
Crank and Spindle	.20
" Screw	.05
Clamps, per pair	.25
Drill Nut	.05
Drive Wheel Bolt and Nut	.10
Drive Wheel	$ .50
Front Leg	.60
Headless Screws	.02
Locking Bolt and Nut	.05
Pitman	.05
" Screw	.05
Pulley	.10
Saw Guide	.10
Stretcher	.15
Stove Bolt	.02
Table, Nickel Plated	.60
" Japanned	.40
Table Bolt	.03
Treadle	.25
Wrench	.06

PARTS OF STAR SCROLL SAW AND PRICES.

Arm Casting	$ .25
" Adjustment, upper arm	.15
" " lower arm	.15
Arms, per pair	.30
Arm Pin	.02
Arm Bolt 1 x 1½ Round Head Car Plated	.05
Back Leg	.40
Frame, to which Arm Casting is attached	.30
Balance Wheel	.35
Brace	.15
Brace Bolt R. H. Stove 1¼ x 3/16	.02
Blower complete	.25
Blower Lever	.05
Belt	.15
Crank and Drill Spindle	.25
" Screw	.05
Clamps, upper and lower complete	.25
Clamp Bolts 1⅜ x 3/16 R. H. Stove	.02
Drill Spindle, Wing Nut	.05
Drills, per dozen	.50
Drive Wheel	1.25
Drive Pulley	$ .10
" Wheel Arbor, complete	.15
Emery Wheel	.40
" " Arbor, complete	.10
Front Leg	75
Locking Bolt	.05
Pitman, Short	.05
" Yoke Castings	.10
Pitman Bolt R. H. Stove 13/16 x 3/16	.02
Pitman, Long	.10
Saw Guide	.10
Saw Guide Screw ⅜ No. 8 Machine Screw	.02
Saw Table, Plated	.60
Saw Table Bolt 1 x ¼ R. H. Carriage	.02
Stretcher Rod, complete	.15
Treadle	.25
" Caps, per pair	.10
Treadle Cap Screws ¼ x ⅜ Blind Screws	.02
Treadle Bolt 1¼ x 7/32 R. H. Stove	.02

ADJUSTABLE WAGON WRENCH.

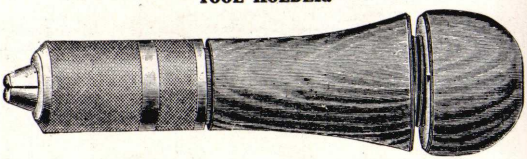


This malleable iron adjustable wrench will turn any nut on a wagon from ⅛ to 1¾ inches square. It grips a nut so tightly that it cannot fall out. When made fast to the axle nut the knob on the back acts as a crank to whirl it off or on rapidly. It is the best wagon wrench in the world, and also a good hand vise

Price ..... per dozen, $3.00

Put up one in a package.

TOOL HOLDER.



This cut represents the general appearance of the tool handles listed below. The handles are made of cocobola, highly polished and of beautiful appearance. The ferrule and jaws are heavily nickel-plated.

The jaws will hold not only the tools in the hollow handle but all other things from a fine awl to a mill-file. No other tool handle in the market will do this. It also answers the purpose of a hand vise. The handles are much larger than this cut, the length being as follows: No. 1, 6 inches; No 4, 6¼ inches; No. 5, 7½ inches.

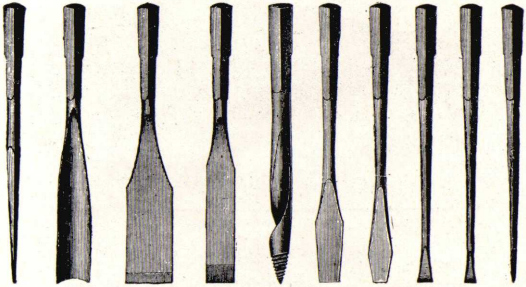
The tools are made from steel of the highest grade, tempered by men of great experience, honed to a fine cutting edge and are all highly finished. They are made for service and will give the greatest satisfaction. The jaws in the handle shut over the shoulders of the tools (as shown in the cuts) so as to make it impossible on pull them out when in use.

The tools in each holder are twice the size represented in the cuts. These goods bear the highest price of any in the market, but their quality is as much higher as the price

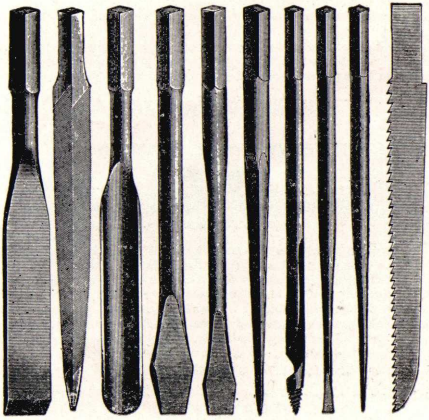
No. 1.	Cocobola handle, with	20	tools	.....	per	dozen,	$12.00
" 4.	" "	"	"	11	"	..... " "	12.00
" 5	" "	"	"	11	"	..... " "	18.00

TOOLS FOR No. 1 HANDLE.

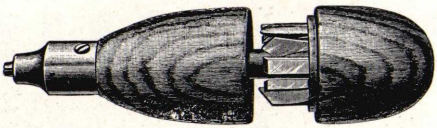
TOOLS FOR No. 4 HOLDER.



TOOLS FOR No. 5 HOLDER.



TOOL SET, No. 6.



The handle is made of cocobola wood, and as shown in the cut is arranged with cells for the assortment of twelve tools. The tools are made from best quality of steel, and will give satisfaction.

Length of handle 4¾ inches, weight 6 ounces.

Price ..... per dozen, $9.00

Put up ½ dozen in a box.

SPOKE SHAVE, No. 1.

The circular shape of this tool enables it to work in smaller circles than other shapes.

The angle of the knife is such that it cuts instead of scraping the grain of the wood. Either handle can be removed to work in cramped places.

Metal parts are polished and nickel-plated, and the handles cocobola.

Price ..... per dozen, $9.00

Put up ½ dozen in a box.

FOUR FACED SPOKE SHAVE, No. 2.

This shave has a throat regulator which will present to the knife four faces: one flat, two oval or convex and one concave.

With either face, wide or narrow throat may be had. The regulator can be changed in a moment by use of the two thumb screws, as shown in the cut.

The knife is also adjustable by screws like other shaves. Either handle may be taken off to work in cramped places. The body of the tool and metal tips to the cocobola handles are polished and nickel-plated. All that any other shave will do, this will also do, and then it will do some more.

Length of blade 2 inches, weight 10 ounces, extreme length 11 inches.

Price ..... per dozen, $12.00

Put up ¼ dozen in a box.

THE GEM SOLDERING SET, No. 1.

As a useful tool for the home the Gem soldering set has no superior. Any housekeeper knows about the annoyance of waiting for a tinsmith to repair an article. In mending two or three articles the Gem saves its cost.

Note.—The coppers to these sets are made of sufficient size to retain heat Do not confound them with some others upon the market which are too small to be of service

No. 1 is arranged so that it can be attached to gas burner to be heated.

Price ..... per dozen, $9.00

THE GEM SOLDERING SET, No. 2.

No. 2 set is not adapted for heating on gas burner, and not quite so highly finished as No. 1.

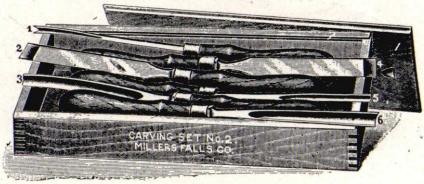
Price ..... per dozen, $6.00

CARVING TOOL SET, No. 1.

The blades to these tools are forged from best quality of steel, and are fully warranted. The handles are cocobola. Length of tools over all 5½ inches. They are put up in wooden boxes, which, for protection, are enclosed in paste-board cartons. The different tools are designated as follows: No. 1, U tool; 2, scraper; 3, bevel chisel; 4, V tool; 5, curved gouge; 6, straight chisel.

Price.....per dozen sets, $12.00

CARVING TOOL SET, No. 2.



The material, finish and method of putting up this set are same as in No. 1 The tools are 8½ inches in length, and are designated thus: No. 1, V tool; 2, bevel chisel; 3, curved gouge; 4, straight chisel; 5 U tool; 6 straight gouge.

Price.....per dozen sets, $18.00

CARVING SET, No. 3.

The above cut represents our carving set of 13 tools (12 carving and 1 matting) gotten up for use in manual training schools, and by amateurs generally. In making up the assortment of tools we have endeavored to ascertain just the shapes and sizes best suited for the work, and think they will be approved of by those who use them. The blades are made from the best steel we are able to procure for the purpose. They are carefully tempered and finished, and are sent out sharpened for use. The handles are made from cocobola wood, and of the most approved shapes. The cases, 9¾ x 8¼ inches in size, are nicely finished, and compare favorably with the tools. A clamp is provided to hold each tool in the case.

Price ..... per set, $5.00

MILLERS FALLS GLASS CUTTERS.

No. 0.

This cutter has a cocobola handle. It works on the same plan as the ordinary diamond cutter with a loose head.

Price.....per gross, $24.00

Put up 1 dozen in a box.

No. 1.

Assorted with extra care, polished finish.

Price.....per gross, $20.00

Put up 1 dozen in a box.

No. 5.

Heavy, for cutting plate glass.

Price.....per gross, $12.00

Put up 1 dozen in a box.

No. 7.

Light malleable handle.

Price.....per gross, $11.00

Put up 1 dozen in a box.

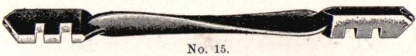
No. 13.

Putty knife and glass cutter combined.

Price.....per gross, $12.00

Put up 1 dozen in a box.

MILLERS FALLS GLASS CUTTERS.

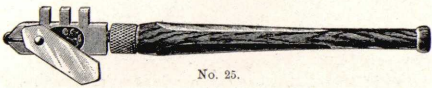


No. 15.

No. 15 (or duplex) is arranged with cutter and breakers at each end. The cutter heads are polished and the handle or centre is japanned.

Price ..... per gross, $20.00

Put up 1 dozen in a box.



No. 25.

The No. 25 cutter has a magazine in the cutter head for storage of duplicate cutter wheels and arbors to replace the wheel in use as it may become dull.

Unless otherwise ordered, each handle is sent out with 5 wheels and 3 arbors in the magazine, besides one wheel and arbor in place ready for use. The cutter handle is made from handsomely finished cocobola, and is the shape of a regular glazier's diamond handle. The cutter head is finely polished and nickel-plated. This tool will last indefinitely. The only expense after purchasing the handle being the small cost of replenishing with cutter wheels as occasion may require.

Price ..... per dozen, $9.00

Put up one in a box.

No. 30.

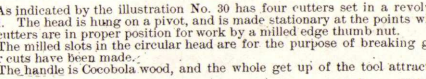
As indicated by the illustration No. 30 has four cutters set in a revolving head. The head is hung on a pivot, and is made stationary at the points where the cutters are in proper position for work by a milled edge thumb nut.

The milled slots in the circular head are for the purpose of breaking glass after cuts have been made.

The handle is Cocobola wood, and the whole get up of the tool attractive.

Price ..... per dozen, $3.00

Put up ½ dozen in a box.



No. 31.

No. 31 is similar in general appearance and finish to No. 30. It has one removable wheel set in the head. Attached to the handle is a magazine, in which are placed eleven extra wheels and two extra pins or axles. A moment's time only is required to replace a worn wheel with a fresh one.

Price ..... per dozen, $8.00

Put up ½ dozen in a box.

THE MONITOR GLASS CUTTER, No. 100.

The *revolving turret* in this glass cutter is provided with *seven cutter wheels* which can in a moment be removed and replaced as they become dull.

A valuable feature of this tool is that the *axles* upon which the cutter wheels revolve can be *removed* and *replaced* instantly, if in time they become worn.

The *frame* is pressed from *steel stock*, highly polished and nickel plated.

The wood *handle* is made from cocobola handsomely polished

The *turret* is made from steel and held in place by a knurled thumb nut on the back of the frame. It can be revolved to bring the cutter wheel in correct position by simply loosening the thumb nut.

The *cutter wheels* are made from the best steel available and scientifically hardened. Each wheel is carefully tested.

This is a most efficient and beautiful tool.

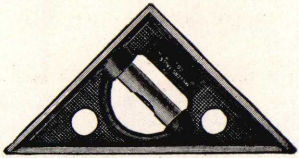
Price ..... per dozen, $4.00

MONITOR GLASS CUTTER, No. 200.

This cutter is similar in every respect to No. 100 described above with exception that it has in addition a magazine handle containing an extra half dozen cutter wheels. The magazine and cap are made from brass, are nickel plated, and add to the appearance of the tool. This metal end may, if desired, be used as a breaker.

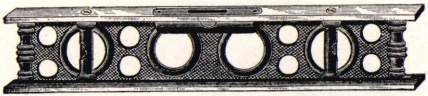
Price ..... per dozen, $7.25

PATENT IRON LEVEL.



No 20.

Nos. 21 and 22.



Nos. 23, 24, 25 and 26.

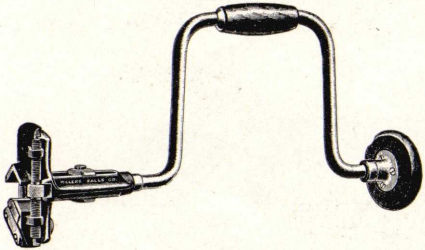
These are our latest improved Iron Levels.

PRICES.

No. 20.	4	inch	right angle triangle level	per dozen, $ 9.00
" 21	4	"	bench level	" " 6.00
" 22.	5	"	" "	" " 7.20
" 23.	6	"	double plumb level	" " 18.00
" 24.	12	"	" " "	" " 21.00
" 25.	18	"	" " "	" " 24.00
" 26.	24	"	" " "	" " 30.00

These levels will be furnished to order with ground glasses when desired at additional charge of 25 cents per glass, or 75 cents per level on numbers having three glasses.

PATENT ADJUSTABLE HOLLOW AUGER, No. 1.

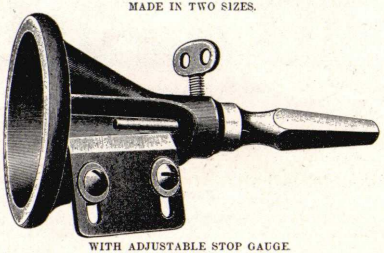


This auger has been on the market for many years, and so far as we know has always given entire satisfaction. The demand for them is steadily increasing. It has all the strength, durability and quick adjustability of any other, and it also has to drive in a steel bit brace sweep of the same size and finish as our No. 10 brace, viz: 14 inch sweep. As the brace sweep is fitted to the auger, it must always work entirely true, which is not the case when used in an ordinary brace. Besides, it often happens that the bit brace on hand is not large enough to drive a spoke auger. Adjustable to cut from ¼ to 1¼ inches.

Price, with sweep..... per dozen, $48.00

SPOKE TRIMMERS.

MADE IN TWO SIZES.



WITH ADJUSTABLE STOP GAUGE.

No. 101. Will cut round stock 1⅞ inches } ..... per dozen, $6.00
" " square " 1⅜ " }

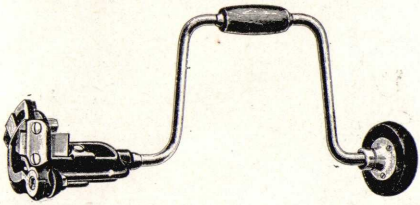
Put up ¼ dozen in a box.

No. 102. Will cut round stock 3 inches } ..... per dozen, $9.00
" " square " 2⅛ " }

Square stock up to 3 inches may be cut by trimming the corners of the wood to be cut first.

Put up ⅓ dozen in a box.

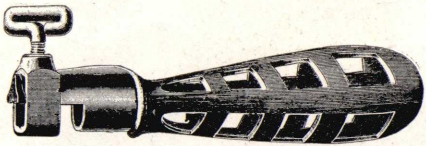
ADJUSTABLE HOLLOW AUGER, No. 2.



From the hundreds of dozens of this pattern of Hollow Auger now in use, we are unable to recall a single instance where they have failed to please. The 14 inch sweep furnished is nickeled and has a ball-bearing head. The auger is adjustable to cut tenons of all sizes from ¼ to 1¼ inches.

Price, complete.....per dozen, $48.00
Price without sweep, but with a bit shank instead.... " " 38.00

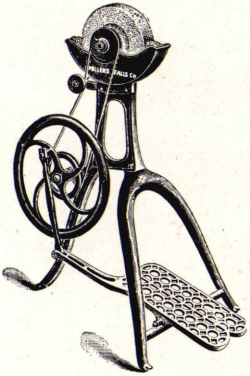
UNIVERSAL HANDLE.



This malleable iron handle is five inches long and has a japan finish. Weight of handle, five ounces. It is strong, durable, and will hold perfectly files with tangs of all sizes and shapes from a 14 inch mill file to the smallest size in use. It will hold equally well twist drills, gimlets, screw drivers and all tools with shanks less than ⅜ of an inch square, round or flat. It will also answer most of the purposes of a hand vise, and will sell at sight anywhere.

Price of handle only.....per dozen, $1.80

Put up ½ dozen in a box.



No. 2.

FAMILY GRINDSTONE, No. 2.

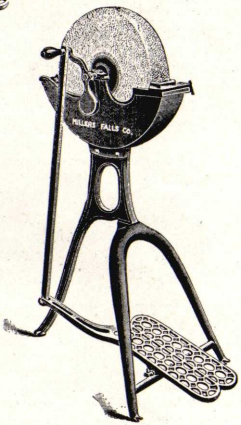
This grindstone is very popular with jewelers and others who use small tools, also for household purposes. The stones are 8 x 1¾ inches. They come from the Huron quarries, and are correct grain for work which they are intended for. Weight, boxed, 66 pounds.

Price .....each, $4.00

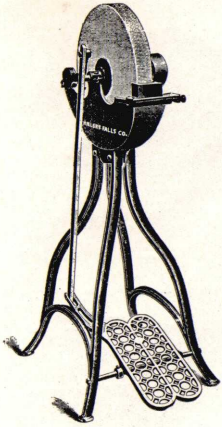
GRINDSTONE, No. 3.

Grindstone No. 3 is same quality as No. 2, described above, but has a stone 14 x 1¾ inches. The increased size and weight give it greater speed and capacity. As the cut shows, the stone is operated by a wooden pitman, which will prove durable and satisfactory. Weight, boxed, 85 pounds.

Price .....each, $4.50



No. 3.



GRINDSTONE, No. 4.

The main difference between this grindstone and our No. 3, is in the shape of the stand, No. 4 having four legs, as shown in the illustration, instead of three. The advantage we claim over previous pattern is stability. The arbor on which the stone is hung is made from steel.

When desired we can furnish for power attachment a 4 x 2 inch pulley. The pulley is represented in above cut. Size of stone 14 x 1¾ inches

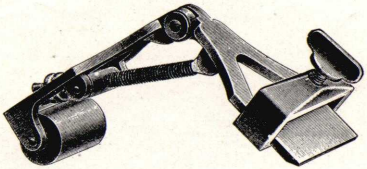
The pulley will not be sent unless specified on orders

Gross weight, 91 lbs.

Price, without pulley..... $5.00
" of pulley..... .50

Packed one in a case.

CHISEL GRINDER.

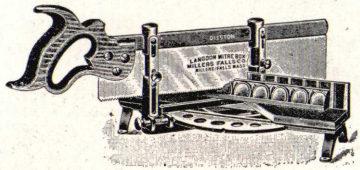


This invention is for holding chisels, plane irons, etc., while grinding them. When put in the holder and brought to the right bevel with the adjusting screw, nothing is left to do but to bear it on the stone, and it will grind all right without further care.

Price.....per dozen, $9.00

Put up ¼ dozen in a box.

LANGDON MITRE BOXES, SIZE B.

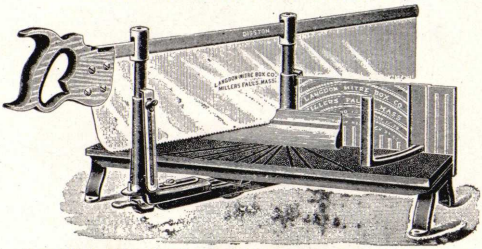


These boxes are very light in weight, easily portable, and are especially convenient to paper hangers in cutting small picture or other mouldings, and for general use where light mouldings are to be worked.

		Capacity at right angles.	Capacity at mitre.	
No. 15½.	Size C, with saw 16 x 2½ in.	4½ in.	3 in.	$5.50
" 16½.	" B, " " 16 x 2 "	4½ "	3 "	4.50

Packed one in a case.

LANGDON MITRE BOXES, SIZE 3.



To meet the demand for boxes to accommodate wide and deep material, we offer Nos. 15 and 16. They are fitted with the circular arms which are described on page 84.

		Capacity at right angles.	Capacity at mitre.	
No. 15.	With saw 28 x 6 in.	12¾ in.	8⅝ in.	$19.50
" 16.	" " 30 x 6 "	12¾ "	8⅝ "	20.00

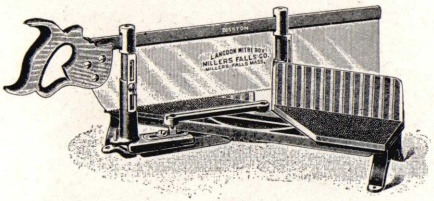
We are occasionally asked to sell mitre boxes WITHOUT SAWS. The following mitre boxes will be sold WITHOUT SAWS, if desired, but without guarantee, as mitre boxes cannot be depended upon to work with saws indiscriminately furnished, and we cannot afford to sacrifice our reputation, which has cost us years of labor to establish.

	Size No. 1.	Size No. 2.	Size No. 2½.	Size No. 3.
New Langdon	$7.00	$8.00	$10.25	.....
Langdon and improved	8.25	9.25	11.25	$16.25

Parties ordering mitre boxes who have saws which they wish to save should send them to us to be adjusted to the box in which they are to be used. No charge will be made for the adjustment to the box in which they are to be used, unless money is paid for PUTTING THE SAW in proper working order.

Such adjusted boxes will be guaranteed to do good work if the saw is found good.

THE NEW LANGDON MITRE BOX.



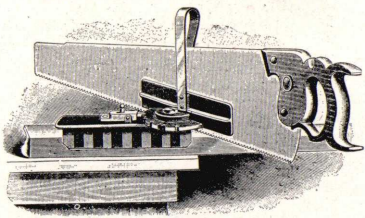
We warrant all our mitre boxes to do perfect work when supplied with back saws fitted by ourselves.

N. B.—Saws are measured extreme length of blades. For convenience of the operator, the corner of blade under handle is clipped off, as shown on cut above.

Order by the Number.				Capacity at right angles.	Capacity at mitre.	Each, including Saw.
No. 17 is size 1,		Saw 18 x 4.....		6¾ inches.	4½ inches.	$ 7 75
" 18	"	" 20 x 4.....		6¾ "	4½ "	8.25
" 19	"	" 22 x 4.....		6¾ "	4½ "	8.75
" 20	"	" 24 x 4.....		6¾ "	4½ "	9.25
" 21	"	" 26 x 4.....		6¾ "	4½ "	9.75
" 22	" 2,	" 22 x 4.....		9⅜ "	6⅜ "	9.75
" 23	"	" 24 x 4.....		9⅜ "	6⅜ "	10.25
" 24	"	" 26 x 4.....		9⅜ "	6⅜ "	10.75
" 25	" 2½,	" 28 x 5.....		9⅜ "	6⅜ "	12.00

For prices of boxes without saws, see page 82.

THE STAR MITRE BOX, No. 40.



We have succeeded in developing a cheap mitre box which, although not as good as the Langdon, is far better than any wooden box that can be made.

It is adjustable at once to the various required angles, and being provided with a double shelf or rest, will cut either a right or left angle with equal ease.

It is made entirely of iron and steel, japanned, with bright parts polished and nickel plated.

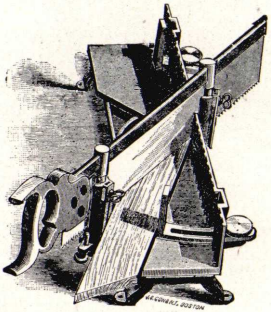
It is very compact, and for outside work, cornices, etc., will be found very convenient, also for cutting wall mouldings for hanging pictures.

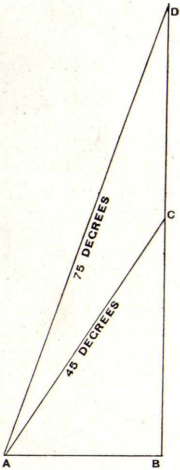
Either a panel or back saw can be used and any depth moulding can be cut.

Price ..... each, $2.00.

Packed one in a box.

NEW LANGDON MITRE BOX IMPROVED.





Ordinary mitre boxes cut from right angles to 45 degrees, inclusive, as shown on the diagram, A, B, C.

The New Langdon Improved cuts, by using the circular arms or guides, from right angles to 75 degrees, on 2½ inch stuff, as shown on diagram A, B, D, varying more or less with width of stuff.

N. B.—Saws are measured extreme length of blades. For convenience of the operator, the corner of blade under the handle is clipped off, as shown on cut, page 83.

Order by the Number.				Capacity at right angles.	Capacity at mitre.	Each, including Saw.
No. 26 is size 1,		Saw 18 x 4		6¾ inches.	4½ inches.	$ 9.00
" 27	"	" 20 x 4		6¾ "	4½ "	9.50
" 28	"	" 22 x 4		6¾ "	4½ "	10.00
" 29	"	" 24 x 4		6¾ "	4½ "	10.50
" 30	"	" 26 x 4		6¾ "	4½ "	11.00
" 31	" 2,	" 22 x 4		9⅜ "	6⅜ "	11.00
" 32	"	" 24 x 4		9⅜ "	6⅜ "	11.50
" 33	"	" 26 x 4		9⅜ "	6⅜ "	12.00
" 34	" 2½,	" 28 x 5		9⅜ "	6⅜ "	14.00
" 35	"	" 30 x 5		9⅜ "	6⅜ "	14.50

For prices of these boxes without saws, see page 82.
For prices of parts, see page 86.

THE LANGDON ACME MITRE BOX.

This cut shows the size 2 Box with the saw suspended by the elevators, the moulding held by the supporting guide on one side, and brought against the length gauge on the other.

The Langdon Acme Mitre Box possesses all the features embodied in boxes heretofore made, together with the following improvements:

The guides are made one inch longer, thus holding the saw steadier when drawn up to its highest capacity. These guides are provided with elevators so the saw is held stationary above the work when desired, as shown in above cut.

In addition to notches for the positive angles commonly in use, the Acme box has a graduated arc in front with the various degrees marked thereon, as per plate shown in above cut.

The saw can be instantly secured at any intermediate or any positive angle by means of a small thumb lever in front of box.

Supporting guides for holding work in place, which guides are also used where angles more acute than 45 degrees are desired.

An appliance for quicker adjustment of extension leyer

A length gauge for duplicate lengths.

Steel bottom boards roughened to prevent work from slipping.

A metal index plate with degrees marked thereon attached to the machine.

The polished parts are nickel plated. These boxes are made in three sizes.

Size 1 is provided with solid swinging lever, which cannot be extended, and carries saw four inches wide under back.

Size 2 is provided with an extension lever by which the front post can be extended to give greater width, and carries saw four inches wide under back.

Size 2½ is provided with an extension lever by which the front post can be extended to give greater width, and carries saw five inches wide under back.

For convenience in ordering, we give serial numbers that the length of saw may be indicated without too much detail as follows:

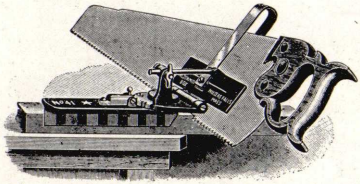
			Capacity at right Angles.	Capacity at Mitre.	Each, including Saw
No. 68.	Size 1,	Saw 22 x 4,	7½ inches.	5 inches	$10.00
" 69.	" 1,	" 24 x 4,	7½ "	5 "	10.50
" 70.	" 1,	" 26 x 4,	7½ "	5 "	11.00
" 71.	" 2,	" 22 x 4,	10¼ "	7 "	11.00
" 72.	" 2,	" 24 x 4,	10¼ "	7 "	11.50
" 73.	" 2,	" 26 x 4,	10¼ "	7 "	12.00
" 74.	" 2½,	" 28 x 5,	10¼ "	7 "	14.00
" 75.	" 2½,	" 30 x 5,	10¼ "	7 "	14.50

All our mitre boxes are provided with saws made for us only by Henry Disston & Sons, Limited. Prices of above boxes, without saws:

Sizes	1	2	2½
Prices	$8.25	$9.25	$11.25

For prices of parts see page 88.

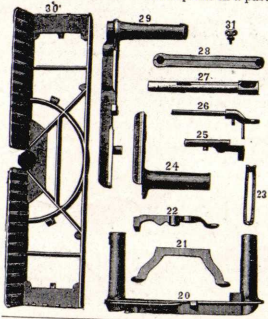
MITRE BOX, No. 41.



This mitre box differs from No. 40 in that it is so arranged that all bevels can be accurately cut, as well as mitres and angles. It will be found particularly useful in jointing flooring.

Price, without saw ..... each, $2.50

Put up one in a paste board box.



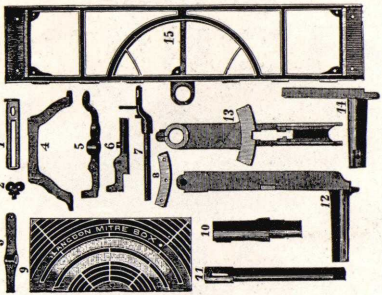
PARTS AND PIECES OF NEW LANGDON AND IMPROVED NEW LANGDON MITRE BOXES.

Persons ordering parts will please state the number of the piece wanted and the size of the machine for which it is designed, stating whether it is for the Langdon or New Langdon. Or if the letters A, B, C, etc., which may be found on the larger castings, are mentioned. They will enable us to determine just what is wanted without further description.

NAME OF PARTS.		Size 1	Size 2	Size 2½	Size 3
20. Swinging Lever	each	$1.25	$ ---	$ ---	$ ---
21. Legs	"	.15	.15	.15	---
22. Stop Lever	"	.30	---	---	---
23. Stop Gauge	"	.10	.10	.10	---
24. Sliding Post	"	---	.50	.85	---
25. Stop Lever	"	---	.45	.45	---
26. Thumb Lever	"	---	.20	.20	---
27. Guide	"	.55	.55	.90	---
28. Gib	"	.25	.25	.25	---
29. Swinging Lever	"	---	1.25	1.35	---
30. Bed and Back	"	1.45	1.45	1.60	---
31. Thumb Screw	"	.10	.10	.10	---
Circular Arms for Improved Box	"	.30	.30	.45	.50
Thumb Screws for Circular Arms	"	.15	.15	.15	.15

NUMBER OF PARTS OF LANGDON MITRE BOX.

MADE TO INTERCHANGE.



☞In ordering backs (No. 9) please state whether a right or left-hand back is wanted.

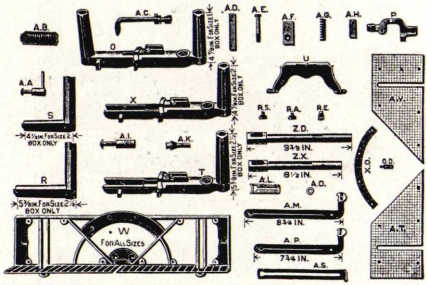
List of Parts (as shown in cut) and Price of Same.

All parts of the mitre box are made to interchange, and will be sent by mail, if postage accompanies order, otherwise by express. Postage one cent for each ounce.

☞Persons ordering parts of machines will please state the number of the piece wanted, and the size of the machine for which it is designed.

NAME OF PARTS.		Mitre B. Size 1.	Mitre B. Size 2.	Mitre B. Size 2½.	Mitre B. Size 3.
1 Stop Gauge	each	$0.10	$0.10	$0.15	$0.20
2 Thumb Screw	"	.10	.10	.10	.10
3 Back Lever	"	.15	.15	.15	.30
4 Legs	"	.15	.15	.15	.30
5 Stop Lever	"	.30	----	----	----
6 Stop Lever	"	----	.45	.45	.50
7 Thumb Lever	"	----	.20	.20	.20
8 Gib	"	.25	.25	.25	.50
9 Back	"	.30	.30	.50	.60
10 Back Post	"	.35	.35	.60	.70
11 Saw Guides	"	.55	.55	.90	1.00
12 Swinging Lever	"	.90	----	----	----
13 Swinging Lever	"	----	1.00	1.00	1.50
14 Sliding Post	"	----	.50	.85	1.00
15 Bed	"	1.00	1.00	1.00	2.00
Bottom Board	"	.10	.10	.15	.20
Spiral Spring	"	.05	.05	.05	.05
Screws	"	.05	.05	.05	.05
Lever Pins	"	.05	.05	.05	.05
Set Screw	"	----	.10	.10	----

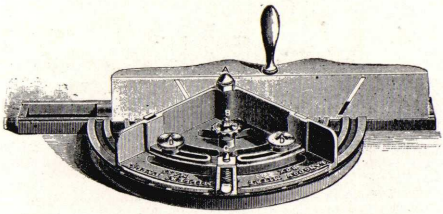
LIST OF PARTS OF LANGDON ACME MITRE BOXES AND PRICES.



A. A	Binder	for sizes 2 and 2½ box	$ .10
A. B.	Index Plate	" all sizes of boxes	.10
A C.	Thumb Stop Lever	" " " "	.20
A D	Gib	" " " "	.10
A. E.	Gib Screw	" " " "	.05
A F	Binding Strap	" " " "	.05
A. G.	Spring	" " " "	.10
A. H.	Stop Lever Strap	" " " "	.05
A. I.	Stock Rest	" " " "	.15
A. K	King Bolt	" " " "	.10
A. L.	Guide Stop	" " " "	.10
A. M.	Elevator Bar	" size 2½ box	.10
A. O	Washer	" all sizes of boxes	.05
A P	Elevator Bar	" size 1 and 2 box	.10
A S.	Length Gauge	" all sizes of boxes	.15
A. T	Right Hand Bottom Board	" " " "	.10
A. V	Left " " "	" " " "	.10
O	Swinging Lever	" size 1 box	1.25
O O	Indicator	" all sizes of boxes	.10
P	Stop Lever	" " " "	.30
R.	Sliding Front Post	" size 2½ box	.75
R. A	Guide Stop Screw—Rear	" all sizes of boxes	.05
R. E.	Elevator Stop Screw	" " " "	.05
R. S.	Guide Stop Screw—Front	" sizes 2 and 2½ box	.05
S.	Sliding Front Post	" size 2 box	.50
T	Swinging Lever	" " 2½ box	1.25
U	Leg	" all sizes of boxes	.15
W	Bed and Back	" size 2½ box	1.50
X.	Swinging Lever	" " 2 box	1.10
X. O.	Graduated Arc	" all sizes of boxes	.15
Z. D	Saw Guide	" size 2½ box	.60
Z. X.	" "	" " 1 and 2 box	.50
Z.	Bed and Back	" " 1 " 2 "	1.50

Parts O, P, R, S. T, U, W, and X, have corresponding letters cast in them, so if in doubt reference may be made to the castings.

THE ROGERS MITRE PLANER.



It is made entirely of iron, and is arranged for planing any desired angle on straight or curved work.

The main bed piece is semi-circular in form with a way or a frame at its rear, on which the plane runs.

The upper or movable bed plate is in quadrant form, having at right angles sides which act as guides for the material to be planed, and revolving on a pivot A, at the end, enabling the user to arrive at the desired angle for straight work, and place it in its proper position against the face of the plane. When the quadrant or movable bed plate is in the center of the main bed plate, its side elevations form an exact mitre, so that no change is required in planing the ends of parts for frames of four sides.

In the sides of the quadrant are two adjustable guides or rests, kept in position by set screws D D.

The special object of these rests is to enable one to finish the ends or angles on curved work with exactness.

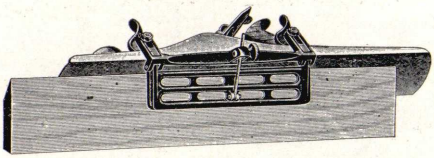
In preparing pieces for circular or oval work, frames, pulleys, emery wheels, circular patterns, etc., it is necessary to plane the ends of the various segments at varying angles. In planing these the point of the quadrant near the plane and the adjustable guides form the rest required for accurate work.

The quadrant is kept in position at any angle desired by pressing the catch, C, down into the notches prepared for it, or by the thumb-screw, B, and can be used in connection with the arms or guides, as desired.

The planer is manufactured in three sizes, each supplied with iron planes.

Size 2, carrying plane irons, 2 inches wide	each,	$20.00
" 3½ " " 3½ " "	"	25.00
" 4 " " 4 " "	"	30.00
Extra plane irons, 2 inches	per pair,	2.00
" " " 3½ "	"	2.50
" " " 4 "	"	3.00

THE PERFECTION JOINTER GAUGE.



As the illustration suggests, this gauge is designed for planing squares or bevels, as may be desired, and can be attached to either iron or wood planes.

One of the important features of the tool is the ease and rapidity with which it can be attached to or removed from a plane. The arms are slotted to provide for adjustment to the varying heights of iron planes. Adjusting bolts upon which eccentric cams revolve, are secured in these slots.

By a partial revolution of the cams the gauge can be attached to or removed from an iron plane instantly.

To use a wood plane the cam bolts are removed and round head wood screws are used in the arm slots instead. The desired bevel is secured by raising or lowering the gauge when it is held firmly in place by the milled edge thumb screw.

It is an attractive tool in appearance, the frame being japanned and the small parts polished and nickel-plated.

Price.....per dozen, $18.00

Put up one in a box.

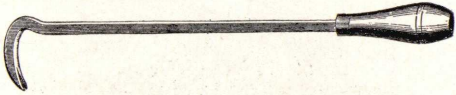
PRATT'S PATENT ELASTIC BOILER TUBE SCRAPER.

Effectual, durable and low in price.

They are made in all sizes, by quarters, 1¼ to 4 inches, inclusive.

Price.....per inch, $1.00

PELICAN NAIL PULLER, No. 2.

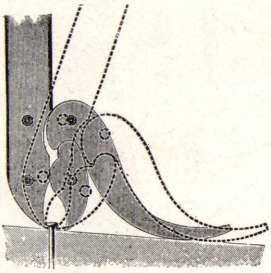


The Pelican nail puller is the least expensive, yet the most rapid working nail puller in use. It is made of the best tempered steel and is warranted to do perfect work. It weighs only one pound, and takes but little room in a carpenter's chest. To be worked with a hammer We regard it as one of the most useful tools we have put upon the market.

Price .....per dozen, $6.00

Put up one in a package.

MILLERS FALLS NAIL PULLER, No. 3.



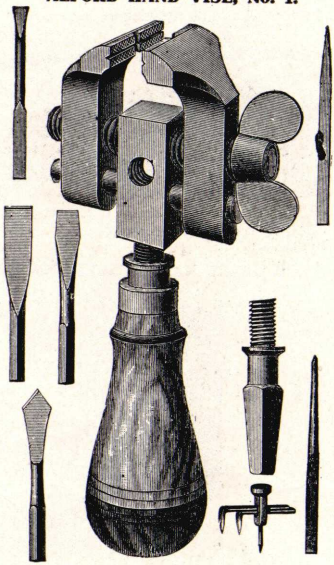
This nail puller is the result of considerable study in an effort to overcome the objections found in the nail pullers upon the market. Owing to the peculiar construction of the jaws they open and shut entirely automatically without the aid of springs—the springs in nail pullers heretofore having been a great objection because of breakage

The body of the cutter is flat and therefore will remain placed when laid down. The handle at the point where grasped is made of wood, which is secured against splitting by having rings inserted at each end.

Price .....per dozen, $12.00

Put up one in a box and two dozen in a case.

ALFORD HAND VISE, No. 1.



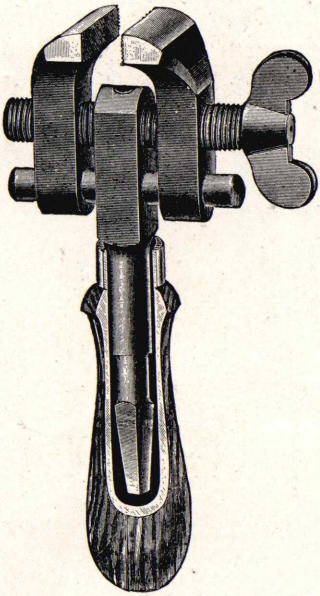
The jaws are of forged and tempered steel. the screw and the cross bar are also made of steel, the handle is made of cocobola. It is hollow, and the bit shank and tools shown in the cut, are placed inside. The blades bent at right angle are used for cutting washers

The vise jaws are 1¼ inches wide and open 1½ inches. They will center and will hold firmly tools of any shape The vise is seven inches long while the tools are twice the size shown in cut. The handle can be unscrewed from the vise and the bit shank put in its place, to be used with a bit brace for any kind of boring, drilling or cutting washers. The handle can also be screwed into the vise at right angles with its usual position, which is desirable for many kinds of work.

Price.....per dozen, $21.00

Put up ½ dozen in a box

HAND VISE, No. 2.

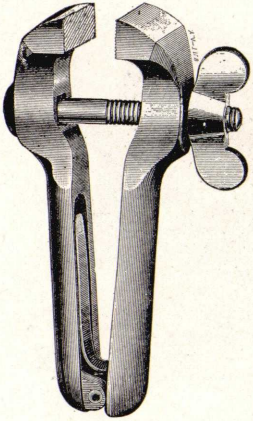


This is a forged steel vise, nickel plated and with a cocobola handle. As the cut shows, the handle may be taken off and the shank placed in a bit brace. The jaws are creased to hold a twist drill. It may be used as a vise, wrench or drill chuck. It is a very substantial tool.

Width of jaws, 1½ inches; jaws open, 1¼ inches; diameter of screw, ½ inch; width of thumb nut, 1¾ inches; length over all, 6¾ inches; weight, 17 ounces.

Price .....per dozen, $18.00

Put up ¼ dozen in a box.



HAND VISE, No. 3.

This vise is made of solid steel castings, well tempered, with a heavy spring inside to open the jaws, which are closed with a bolt and nut, as shown in the cut.

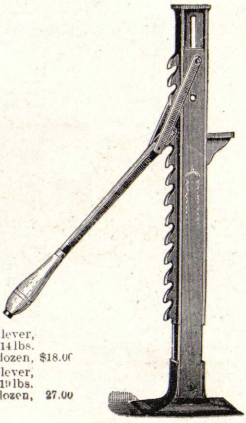
The jaws are 1½ inches wide, and open 1½ inches. Length of vise, 5 inches. Weight, 1 lb.

Price in black finish with polished jaws ----------per dozen, $9.00

Put up ½ dozen in a box

POWER'S WAGON JACK.

Power's Wagon Jack is made to meet the wants of the regular hardware trade. It is very compact, and occupies but little space in transportation or in the store. The side supports are wrought iron, the foot-piece malleable iron and the lift bar cast iron. When the lever is depressed it is carried past the center, so as to be self-locking. It is the quickest working and most durable jack in the market, and also the handsomest, being nicely japanned and ornamented.

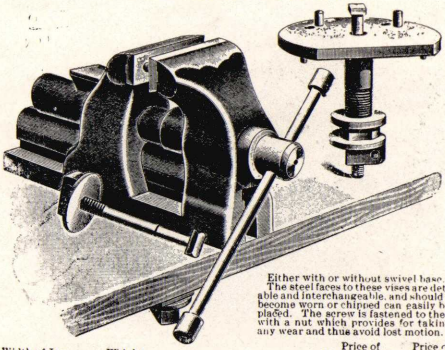


No. 1. Lift, 12 to 32 in.; length of lever, 13 in.; will raise 1,000 lbs.; weight, 14 lbs.
Price ----------per dozen, $18.00

No. 2. Lift, 14 to 34 in.; length of lever, 16 in.; will raise 1,500 lbs.; weight, 19 lbs.
Price ----------per dozen, 27.00

Packed 1 dozen in a case

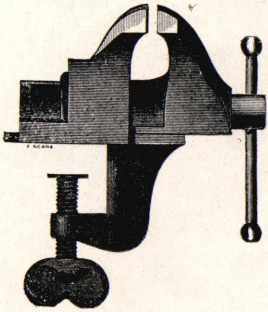
MILLERS FALLS VISE.



Either with or without swivel base. The steel faces to these vises are detachable and interchangeable, and should they become worn or chipped can easily be replaced. The screw is fastened to the vise with a nut which provides for taking up any wear and thus avoid lost motion.

Width of Jaw.	Weight.	Price of Vise with bolt.	Price of Swivel Base.
2 in.	8 lbs.	$ 4.00	$ .50
2½ in.	18 lbs.	5.50	.75
3 in.	32½ lbs.	7.00	1.00
3½ in.	42 lbs.	9.00	1.00
4 in.	46 lbs.	10.00	1.25
4½ in.	54 lbs.	12.50	1.50
5 in.	76 lbs.	17.00	1.75
6 in.	102 lbs.	25.00	2.00

N. B.—When swivel bases are wanted so specify on order.

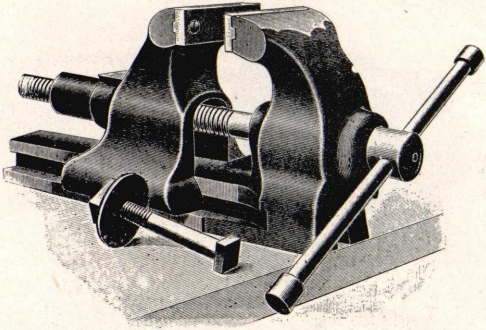


OVAL SLIDE CLAMP VISE.

Width of Jaw.	Weight.	Price, each.
1¼ in.	2½ lbs.	$1.25
1¾ in.	3½ lbs.	1.50

Not so low in price as some other makes, but the quality warrants our figures.

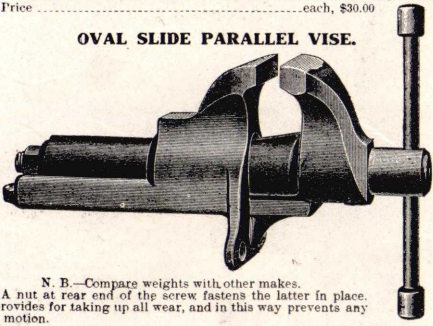
RAILROAD VISE.



This vise is made heavy and strong, and is especially adapted for railroad and other shops where heavy work is done. Width of jaws, 7 inches; opens 15 inches; weight, 168 lbs.

Price ..... each, $30.00

OVAL SLIDE PARALLEL VISE.



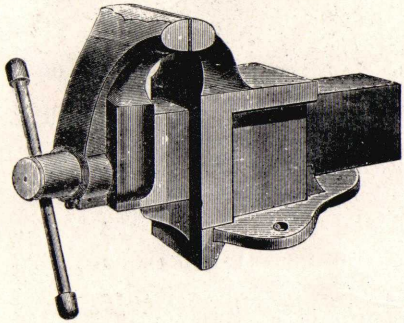
N. B.—Compare weights with other makes.

A nut at rear end of the screw fastens the latter in place. It provides for taking up all wear, and in this way prevents any lost motion.

Width of Jaw.	Weight.	Price, each.
2 in.	7 lbs.	$2.50
2½ in.	11½ lbs.	2.70
3 in.	17½ lbs.	3.60
3½ in.	27½ lbs.	4.65
4 in.	35½ lbs.	6.70
4½ in.	41½ lbs.	9.65

MECHANICS' VISE.

INSERTED STEEL JAWS.



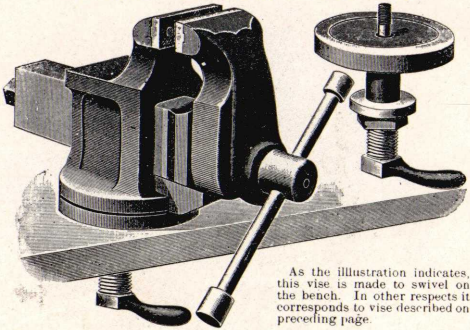
It will trouble you to find another vise which will compare favorably in merit and finish with this, our Mechanics' pattern. Both jaws and anvils are steel-faced. The jaw faces are detachable and can be replaced at pleasure.

The screw is fastened to the vise with a nut which provides for taking up any wear and thus obviate lost motion.

Observe the weights:

Width of Jaw	Opens	Weight.	Price, each.
1½ In.	2½ in	3½ lbs.	$ 3.00
2 in.	3½ in.	11 lbs.	4.00
2½ in	3½ in.	22 lbs.	5.50
3 in	4½ in.	41 lbs.	7.00
3½ in	4½ in.	41½ lbs.	9.00
4 in.	5 in.	54½ lbs.	10.00
4½ in.	5 in.	55 lbs.	12.00
5 in.	6 in,	78 lbs.	17.00

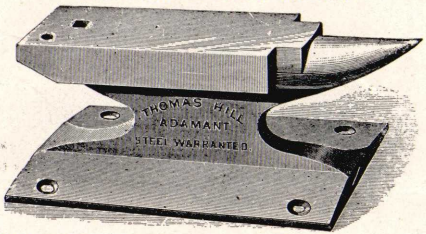
MECHANICS' VISE WITH SWIVEL BASE.



As the illustration indicates, this vise is made to swivel on the bench. In other respects it corresponds to vise described on preceding page.

Width of Jaw	Opens.	Weight.	Price each.
3 in.	4½ in.	48 lbs.	$ 8.00
3½ in.	4½ in.	56 lbs.	10.00
4 in.	7 in.	62 lbs.	12.00
4½ in.	7 in.	63 lbs.	14.00

HILL'S SOLID STEEL ANVILS.



These anvils are not cast into this shape, but are forged from solid steel, and have a suitable anvil temper throughout.

The horn is two inches long, in addition to the length of face given below. The face, sides and horns are nicely polished. The bottom part is japanned.

If dealers will take the trouble to show these superior goods, they will sell at sight.

			Price, each.
No. 1.	5 in. long,	1½ in. wide; weight, 4 lbs.	$2.00
No. 2.	6 in. "	2 in. " " 5½ lbs.	2.50
No. 3.	7 in. "	2 in. " " 9 lbs.	3.00

JACK SCREWS.

The barrels of these jacks are cast iron, the screws are steel and the thread to the screws lathe cut. Owing to the smoothness with which they work and to their superior character generally, they command a little higher price than the ordinary goods offered on the market. A lever bar is supplied with each jack.

Diameter of Screw	Height of Barrel	Height of Jack when turned down to the lowest point	Net Rise	Whole Height	Weight	Estimated Lifting Capacity	Price
No. 1, 1¼ in	6 in	9 in	4 in.	13 in.	8½ lbs.	No. 1, 5 tons	$2.50
" 2, 1¼ in	7 in	10 in.	6 in	16 in	9½ lbs.	" 2, 5 "	3.00
" 3, 1½ in	7 in	10¾ in	5 in	16 in.	16 lbs.	" 3, 8 "	3.25
" 4, 1½ in.	9 in.	12¾ in	7 in	20 in.	20½ lbs.	" 4, 8 "	3.75
" 5, 1½ in	11 in.	14¾ in	9 in.	24 in.	22½ lbs.	" 5, 8 "	4.00
" 6, 1¾ in.	9 in.	12¼ in	6 in.	18 in.	22½ lbs.	" 6, 12 "	4.25
" 7, 1¾ in.	10½ in	14¼ in	8 in.	22 in.	25 lbs.	" 7, 12 "	4.50
" 8, 1¾ in.	12½ in	16 in	10 in.	26 in.	29 lbs.	" 8, 12 "	5.00
" 9, 1¾ in	14½ in	18¼ in	12 in.	30 in.	32 lbs.	" 9, 12 "	5.50
" 10, 2 in.	8 in	12¼ in.	5 in	17 in	27 lbs.	" 10, 15 "	5.50
" 11, 2 in	10 in	14 in.	7 in	21 in	31 lbs.	" 11, 15 "	6.00
" 12, 2 in	12 in	16¼ in	9 in	25 in	35 lbs.	" 12, 15 "	7.00
" 13, 2 in	16 in	20½ in	13 in	33 in.	41 lbs.	" 13, 15 "	8.00
" 14, 2½ in	9½ in.	15 in.	8 in	23 in	45½ lbs.	" 14, 20 "	8.50
" 15, 2½ in	11½ in	16¾ in	10 in	27 in	50 lbs.	" 15, 20 "	9.50
" 16, 2½ in	15½ in	20¾ in	14 in	35 in	62 lbs.	" 16, 20 "	11.00
" 17, 2½ in	19½ in	25 in	18 in	43 in	75 lbs.	" 17, 20 "	13.00

CAR JACKS.

Diameter of Screw	Height of Barrel	Height of Jack when turned down to the lowest point	Net Rise	Whole Height	Weight	Estimated Lifting Capacity	Price
No. 17½, 2 in.	6 in.	10 in.	4 in.	14 in.	19½ lbs.	No. 17½, 15 tons	$5.00
" 18, 2 in.	8½ in.	12½ in.	5 in.	17 in.	25 lbs.	" 18, 15 "	5.50
" 19, 2 in.	10½ in.	14¼ in.	7 in.	21 in.	29 lbs.	" 19, 15 "	6.00
" 20, 2 in.	12 in.	16 in.	9 in.	25 in.	35 lbs.	" 20, 15 "	7.00

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